IP PBX

EP520 Operation Manual

June 2007

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1. Introduction

1.1. Overview

The EP520 is an embedded Voice over IP (VoIP) PBX Server with Session Initiation Protocol (SIP) to provide IP extension phone connections for global virtual office of small-to-medium business (SMB) companys. Equipped with 4 x FXO ports, Ethernet LAN and WAN ports plus Life Line features, EP520 integrates the telephony network and the data network into a manageable converged network to provide an efficient and economical PBX for global long distance voice communications.

EP520 IP PBX works with various IP phones (Desktop, WiFi, Bluetooth, and DECT), VoIP gateways, and analog telephone adapters (ATA) to route calls among client phones, analog phones, and PSTN network. Call features such as conferencing, auto attendant, and voicemail can be seamlessly enabled for all phone devices. In addition, it also provides Internet access to all LAN devices through VPN NAT router.

EP520 IP PBX provides call control and media relay services to SIP clients, and it performs many primary functions, such as SIP Registrar, SIP Outbound Proxy with media relay, SIP Gateways (FXO), SIP PBX for extension calls, Auto attendant Interactive Voice Response (IVR), and Meet-Me Conferencing.

EP520 IP PBX has a built-in suite of PBX applications for supplementary services. This lowers down the total cost of a converged network enabled by EP520 IP PBX than building separated infrastructures for legacy telephony network and data network. In addition, with a web-browsable interface to the data network configuration and voice service provisioning, EP520 brings the manageability of both networks together to facilitate administration locally and/or remotely.

Note that EP520 requires an IP address, a subnet mask, and its gateway Router IP address for its own use to connect to Internet. These three are available from your Internet service provider. EP520 may enable PPPoE or DHCP features to automatically get an assigned dynamic IP from the ITSP. Please refer to Web Configurations for detailed information.

2. Features

The EP520 IP PBX is equipped with RJ45 & RJ11 connectors and is featuring as the following:

- SIP Server supports 50 user registrations and 20 concurrent calls
- SIP v1 (RFC2543), v2 (RFC3261) with MD5 authentication (RFC2069 and RFC 2617)
- RJ45 x 2 for Ethernet WAN and LAN ports + RJ11 x 4 for FXO ports + Life Line FXS port
- Supports ITU-T G.711a, G.711u, GSM/MS-GSM, G.729A/B, VAD and CNG for Speech Codec
- Configurations by Web Browser with Embedded Web Call functions
- Embedded NAT/DHCP Server
- PPPoE/DHCP Client for Dynamic IP plus NAT, VPN, DNS, and DDNS Clients
- Support STUN server and DMZ functions for NAT Traversal
- Support VPN function
- Support Call features; Call Forward/Waiting/Transfer/Hold, and Voice Conference Room
- Support E.164 ENUM Dial Number via SIP server
- Incoming Call Pickup for Group users
- Incoming Call Ringing for Group users
- Number Bonding and Call restrictions.
- Follow Me function
- Extension Pickup for Attendant
- Bill Rate Table with Voice Mail
- Interactive Voice Recording (IVR) Settings by XML
- Programmable Prompt messages
- On-Line Subscriber Status
- Remote Firmware Upgraded with HTTP or TFTP server by Web PC
- Auto Provision Settings
- Out-Band DTMF (RFC 2833) / In-Band DTMF / Send DTMF SIP Info

3. Standard Compliance

The EP520 IP PBX supports for the following standards

VoIP Protocols:	IETF RFC3261 and RFC 2543 for SIP
SIP Authentication:	IETF RFC2069 and RFC 2617 for MD5
Speech Codec:	ITU-T G.711a, G.711u, GSM/MS-GSM, G.729A/B, VAD and CNG
Echo Cancellation:	ITU-T G.165/168

4. Packing Content

Inside the package you should find:

(1) One EP520 IP PBX

(2) One AC100~240V to 12VDC/1A Power Adaptor

(3) One Cat 5 Cross-Over Ethernet Cable

(4) One User Manual CD

5. LED Indicators & Interface Connectors

LED Indicators

On the front panel of EP520, there are 12 LED indicators as the following table

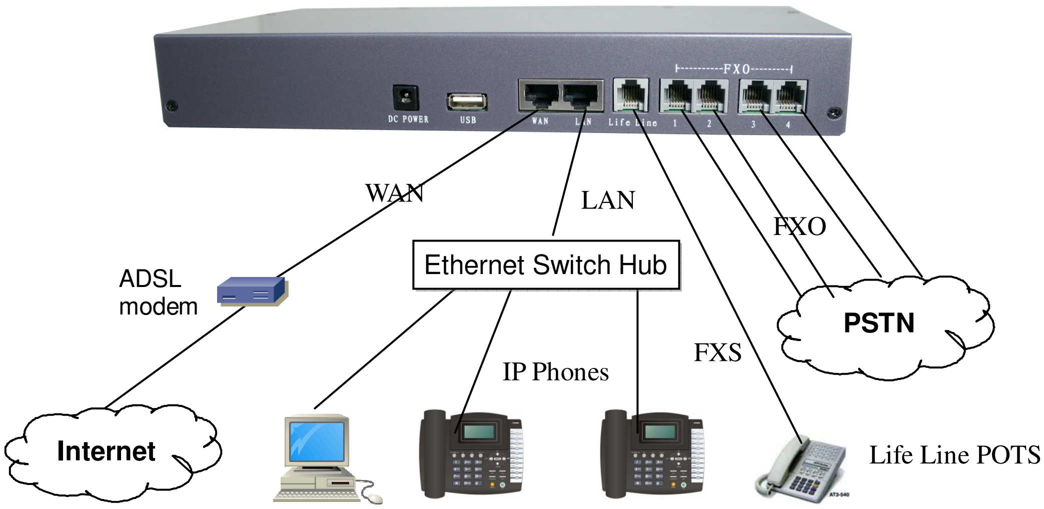
LED	Status	Descriptions
POWER	ON	Power is Normal.
ACTIVE	ON	IP PBX is in Normal Operation
ALARM	ON	IP PBX is at alarm status
VPN	ON	Virtual Private Network function is ON
FXO 1	ON	PSTN Line 1 is enabled and IDLE
	Flashing	PSTN Line 1 is in use
FXO 2	ON	PSTN Line 2 is enabled and IDLE
	Flashing	PSTN Line 2 is in use
FXO 3	ON	PSTN Line 3 is enabled and IDLE
	Flashing	PSTN Line 3 is in use
FXO 4	ON	PSTN Line 4 is enabled and IDLE
	Flashing	PSTN Line 4 is in use
LAN	ON	LAN Port is in connection
	Flashing	LAN Ethernet data activity
10/100M	ON	LAN Ethernet port is in connection at 100Mbps
WAN	ON	WAN Port is in connection
	Flashing	WAN Ethernet data activity
10/100M	ON	WAN Ethernet port is in connection at 100Mbps

Interface Connectors

1. DC Power	12Volt DC / 1A Power Adaptor with 100~240V AC power input
2. FXO ports	4 FXO ports are for connection to PSTN lines, and numbered 1, 2, 3 and 4 from left to right.
3. Life Line port	Life Line FXS port connects to an analog telephone. When power is down, the Life Line will switch to FXO port 1 for PSTN line 1.
4. WAN port	Connect to a broadband ADSL/Cable modem or a WAN router.
5. LAN port	Connection to PC for Web configurations or Laptop, extended IP Phones, or VoIP Gateways/ATA, etc.
6. USB port	Connect to an external USB drive for backup internal system storage. Click the **Backup** icon in Web configurations and follow instructions to insert the USB connector of an external USB drive.

Note: If PC is directly connected to the LAN port of EP520 for web configurations, please use the enclosed Cross-Connect CAT5 Cable.

6. Installations



7. Reset to Factory Default

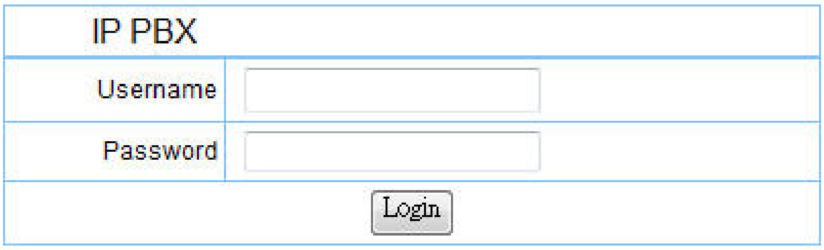
EP520 can be reset back to factory default when IP address is not accessible for web configurations. The procedures are as follows:

1. Turn off Power
2. Press the RESET button and hold continuously, then turn power on.
3. Hold the Reset button until all the LED indicators start flashing for three times. It may take 15-20 seconds to reset, and the Reset button can then be released.
4. After released the LED indicators will begin flashing for 3 times again to activate the IP PBX. Note that the firmware version and IP settings will be reset back to factory defaults and users data base will be cleared. It is suggested that the user data base be backed up to USB memory disk storage before reset.

8. IP PBX Configurations by Web Browser

You may enter the IP address from PC Web browser to configure EP520. For example, enter **http://192.168.1.1** from IE web browser to display login page as follows. Note that EP520 does NOT support auto-MDIX for LAN port. If a notebook PC is directly connected to the LAN port of EP520 for web configurations, the user may need an Ethernet Cross-over CAT5 cable included in the accessory.

1). Please enter the default IP address **http://192.168.1.1** from PC Web browser.
The following Web page shall be displayed on PC. If you have difficulties accessing the Web page from the PC Web browser, the subnet IP of PC might be different from **192.168.1.xxx.** In this case, please refer to Chapter 9 for trouble shooting.



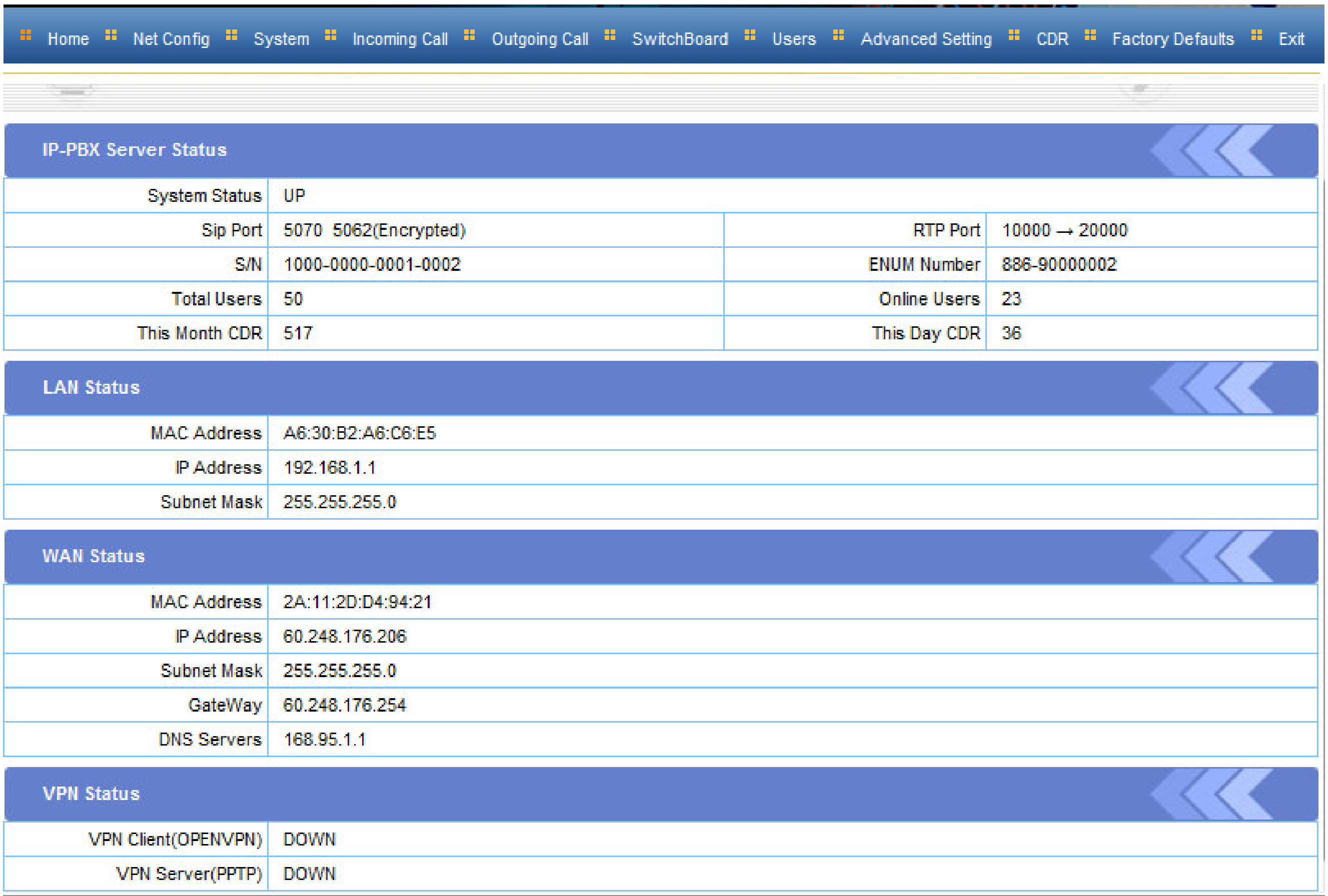
2). Please enter the username and password into the blank field. The default settings are:
Username: **admin**
Password: **123456**

3). Click the "**Login**" button to enter the EP520 for web configurations.
Whenever you change the setting in each Web page, remember to click the "Submit" button in the page, and click the "Update" button to save into the non-volatile memory and click the "Reboot" button to activate the new settings.

WAN & LAN Network IP Address and Mask

NIC	IP Address	Mask
WAN	192.168.139.3	255.255.255.0
LAN	192.168.1.1	255.255.255.0

4). EP520 provides 50 SIP extension user accounts which can be configured as well by Web browser. The preset user ID numbers are from **2001~2010** with same password **123456**. The SIP service port is default at **5060**.



IP-PBX Server Status

System Status	UP		
Sip Port	5070 5062(Encrypted)	RTP Port	10000 → 20000
S/N	1000-0000-0001-0002	ENUM Number	886-90000002
Total Users	50	Online Users	23
This Month CDR	517	This Day CDR	36

LAN Status

MAC Address	A6:30:B2:A6:C6:E5
IP Address	192.168.1.1
Subnet Mask	255.255.255.0

WAN Status

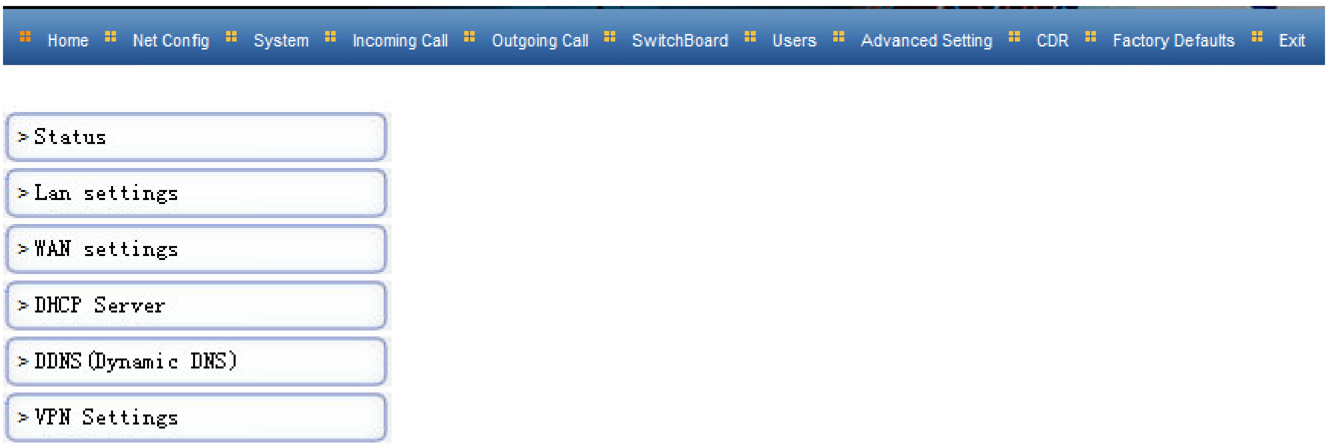
MAC Address	2A:11:2D:D4:94:21
IP Address	60.248.176.206
Subnet Mask	255.255.255.0
GateWay	60.248.176.254
DNS Servers	168.95.1.1

VPN Status

VPN Client(OPENVPN)	DOWN
VPN Server(PPTP)	DOWN

8.1 Net Config

EP520 IP-PBX provides two RJ45 connectors for LAN and WAN ports at 10/100M Ethernet interfaces. The Net Config will display the current status for LAN, WAN, DHCP, DDNS, and VPN settings.



8.1.1 Network Status

Network Status shows all the IP addresses for LAN, WAN, VPN server and VPN clients.

LAN Status	
MAC Address	A6:30:B2:A6:C6:E5
IP Address	192.168.1.1
Subnet Mask	255.255.255.0

WAN Status	
MAC Address	2A:11:2D:D4:94:21
IP Address	60.248.176.206
Subnet Mask	255.255.255.0
GateWay	60.248.176.254
DNS Servers	168.95.1.1

VPN Server(PPTP)	
Server Status	DOWN
Local Address	192.168.0.1
Address Range	192.168.0.234-254
User Name	
Password	

VPN Client(OPENVPN)	
Client Status	Disable
Client Address	
Server Address	

8.1.2 LAN Setting

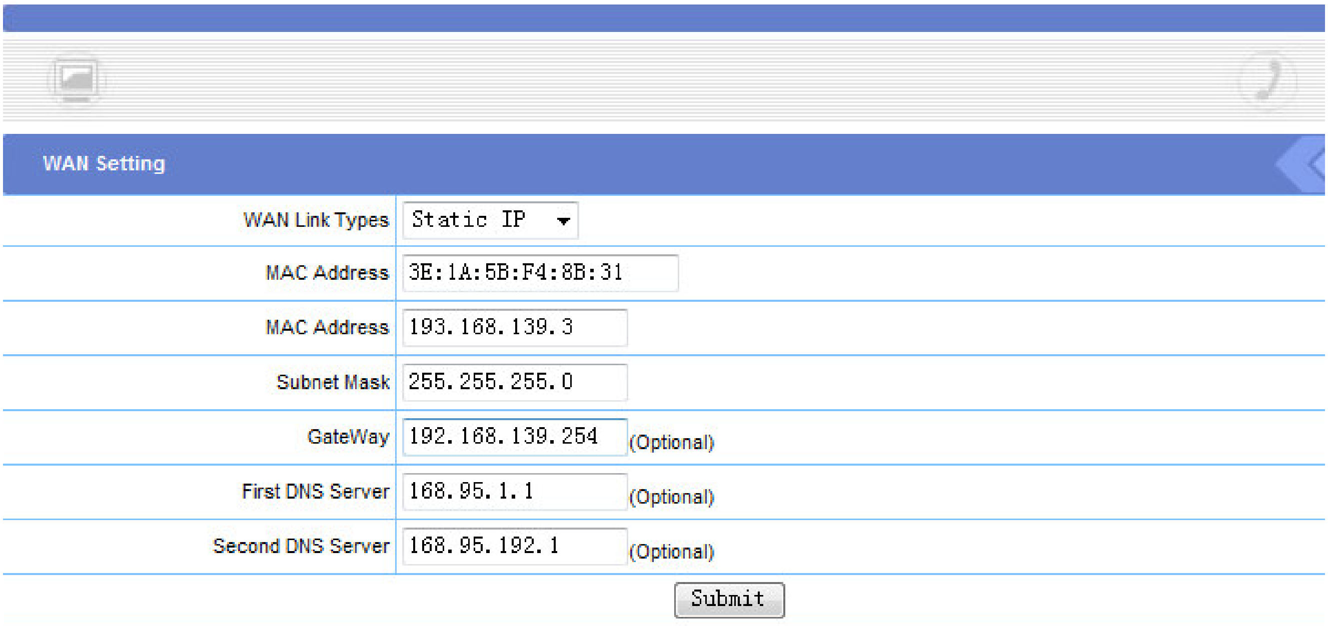
LAN Port can be used for IP-PBX to connect to a Notebook PC for configurations. The embedded DHCP Server will automatically assign IP address through the LAN port.

LAN Setting	
MAC Address	2A:70:88:AD:FE:96
IP Address	192.168.62.3
Subnet Mask	255.255.255.0
System Tips	when IP parameters（IP address, subnet mask）alterred on LAN interface, you should ensure address pools, static addresses and new IP address are in the same net segment to assure the normal functionality of DHCP server.Please reboot the system.
	Submit

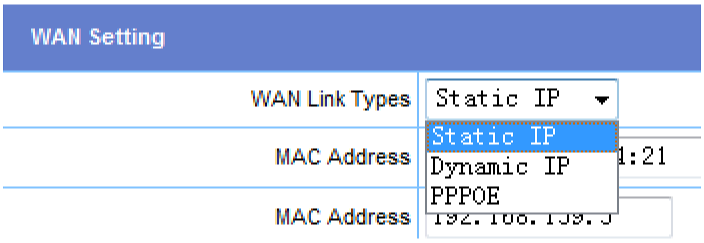
MAC Address must be unique in the same network. IP Address must be xxx.xxx.xxx.xxx and xxx is from 0 to 255, e.g. 192.168.1.1. Subnet Mask is used for network segmentation. Please make sure the mask is correct and the all the VoIP devices are within the same network as EP520.

8.1.3 WAN Settings

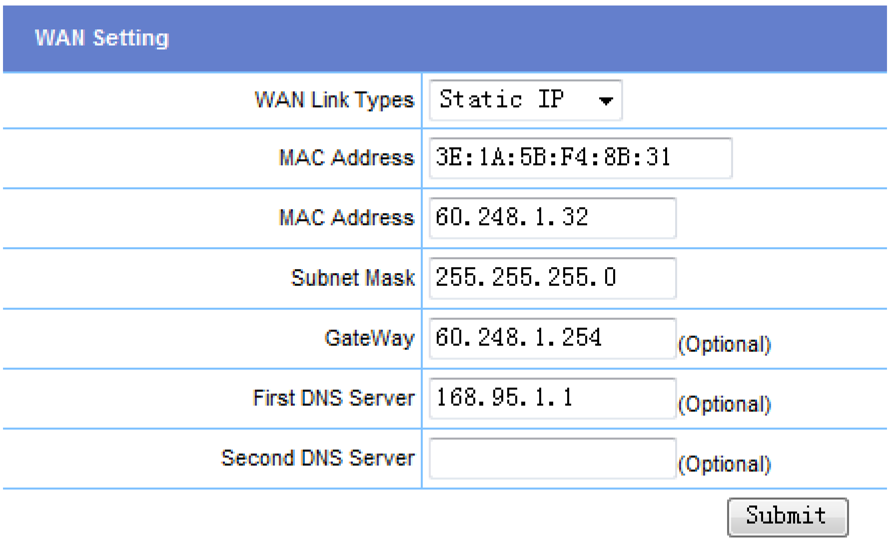
WAN port is to connect to ADSL modem for Internet access. There are 3 options for WAN settings; DHCP, Static IP, and PPPoE. The following example shows a Static IP type for WAN Setting.



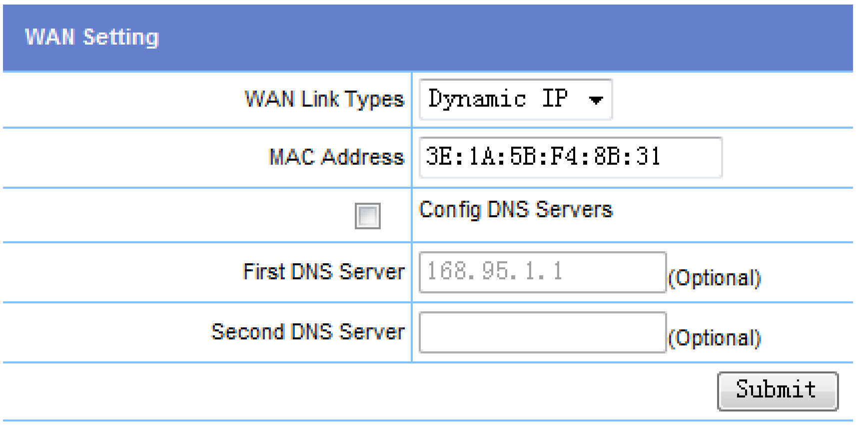
WAN Link Type



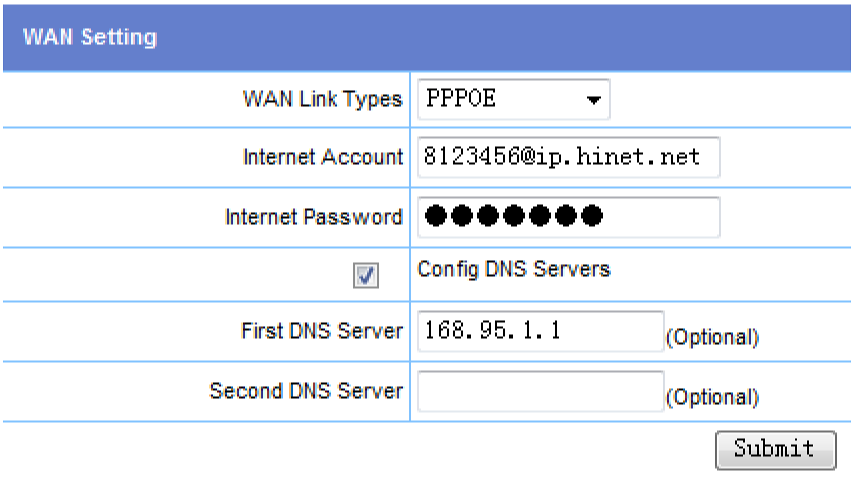
Static IP mode



Dynamic IP Mode



PPPoE Mode



When EP520 IP-PBX connects to ADSL Modem with PPPOE link, you may need to enter the account name and password for PPPOE. In addition, you may select the DNS server and enter the IP address for the First and Second DNS servers.

8.1.4 DHCP Server

The embedded DHCP server in NAT will automatically assign IP address to the network devices.

DHCP Server Status: To show the current DHCP server status

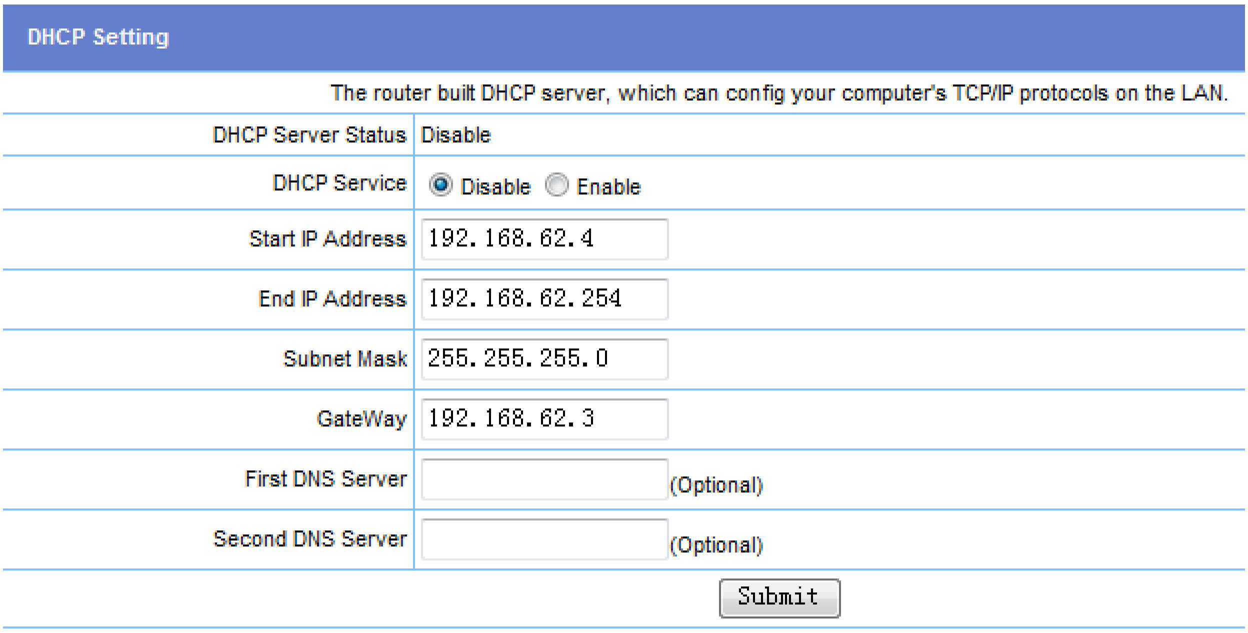
DHCP Server Start/Stop: To enable/disable DHCP Server

Start/End IP Address: DHCP Server will assign the IP within the start/end IP address, e.g. 192.168.1.100－192.168.1.200. Note that the start IP and end IP must be in the same network.

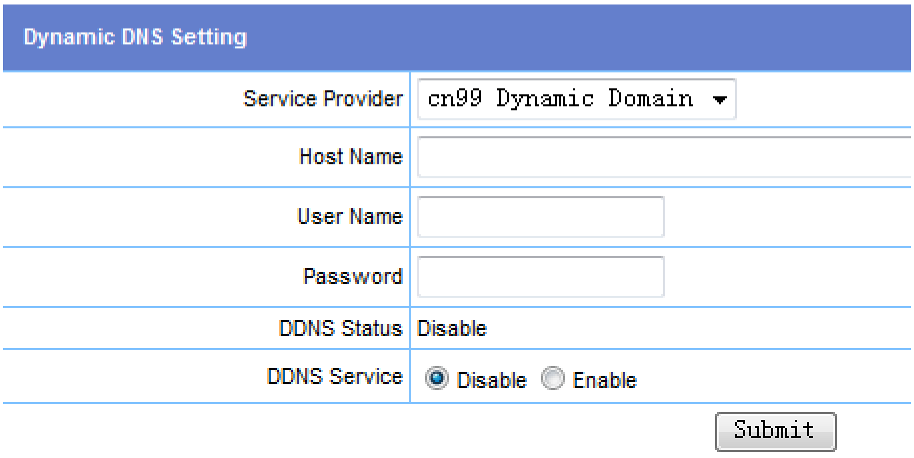
Mask: Usually 255.255.255.0 for subnet mask

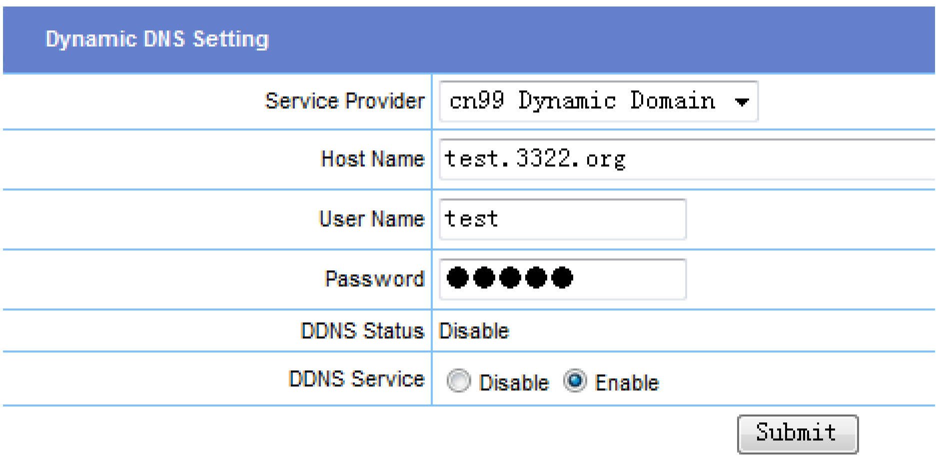
Default Gateway: The IP address for NAT gateway.

DNS Server: The Domain Name Server IP address.



8.1.5 DDNS Settings

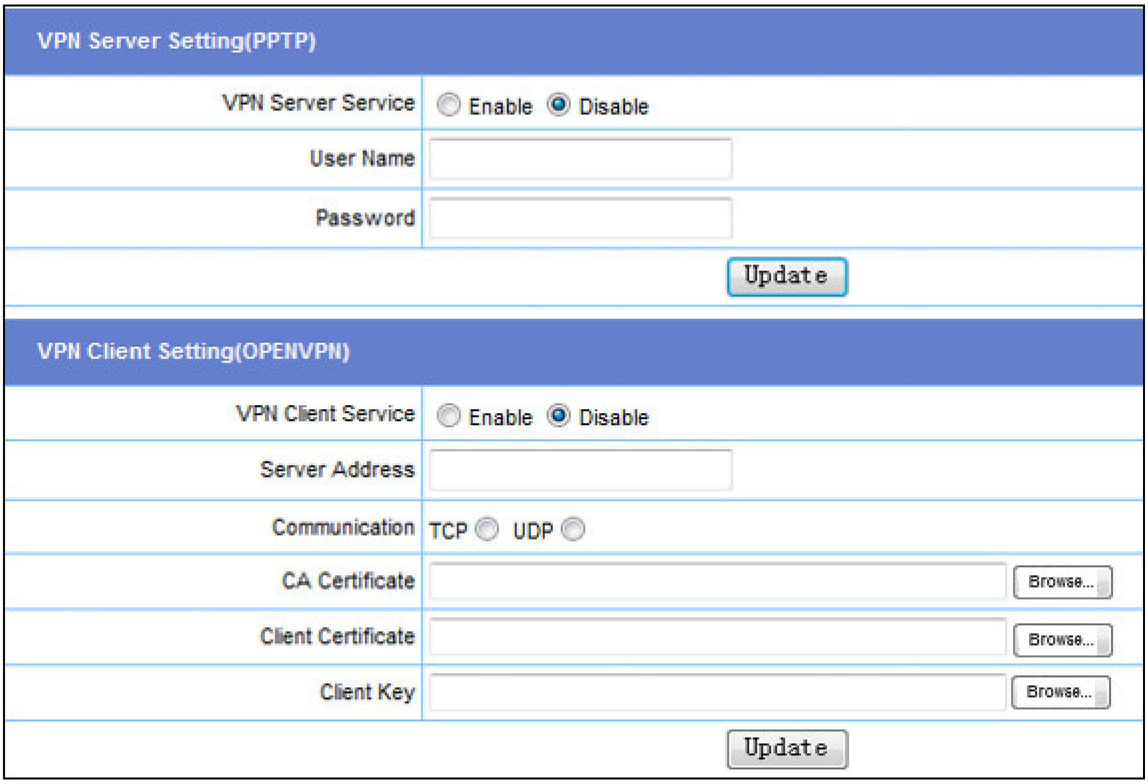




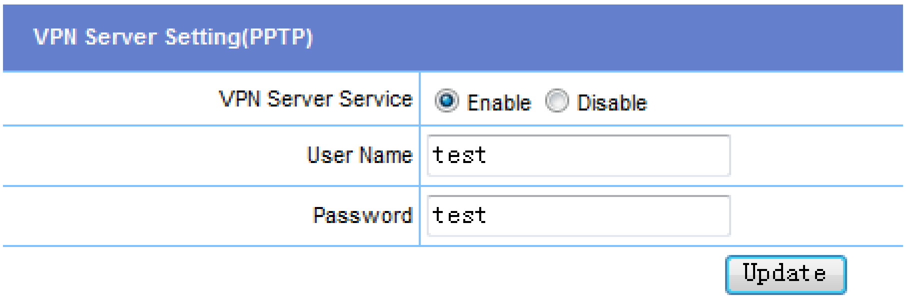
DDNS Settings

This shows the current registration of www.3322.org for dynamic DNS service.

8.1.6 VPN Settings



VPN Server Configuration for PPTP (Point-to-Point Tunnel Protocol)

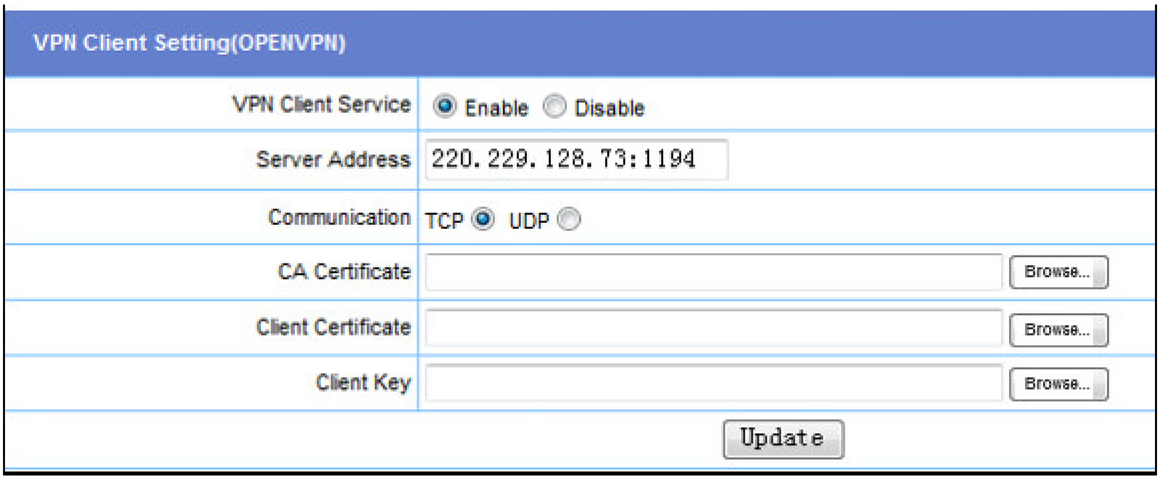


VPN Server : enable

UserName :

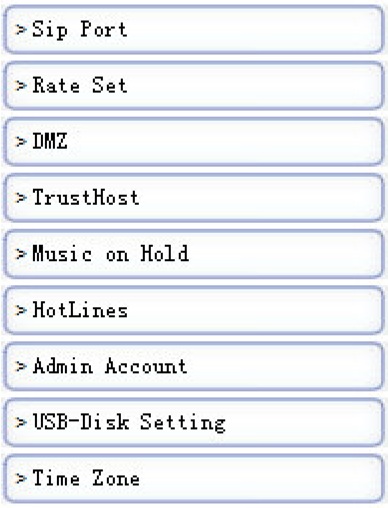
Password :

VPN Client Configuration for OPENVPN



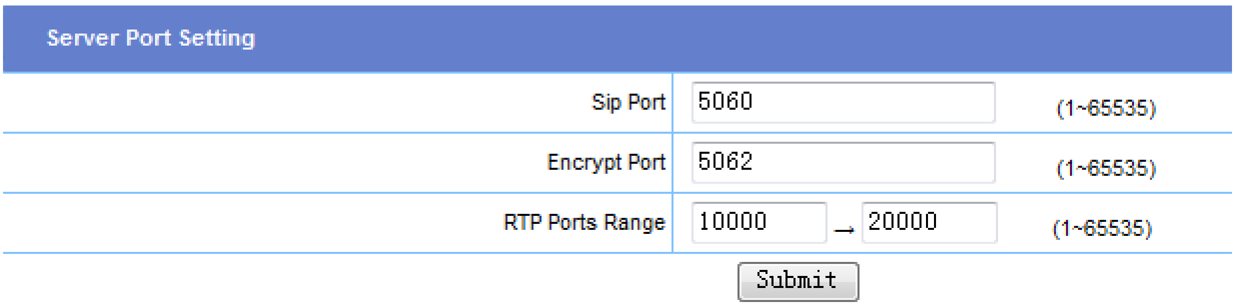
8.2 System Configurations

The EP520 IP PBX System configurations can be set in this section. The settings include SIP Port, rate setting, DMZ, System Authentications, Music on Hold, Hotlines, USB_disk, etc.



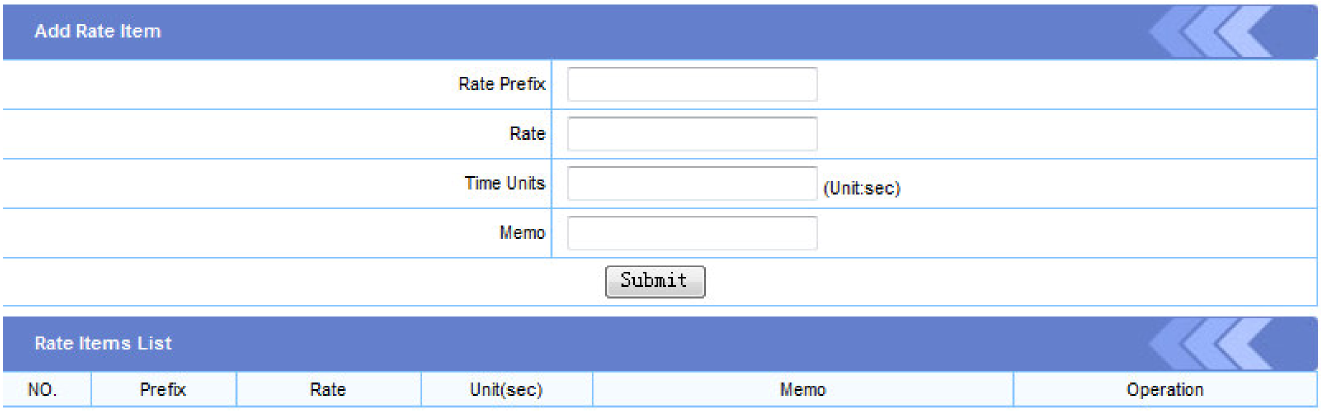
8.2.1 SIP Port

The SIP default port number is 5060 for VoIP Applications. The user may assign a value for SIP port from 1 to 65535. Note that the SIP port number must be the same for all the IP-PBX and VoIP phones.



8.2.2 Rate Settings

Rate setting is used to calculate the charges for each call. The IP PBX will generate a call record for the charges. All the charges are based on this rate table.



The rate is based on the prefix to calculate the charges:

Prefix: 0

Rate: 15 (cent)

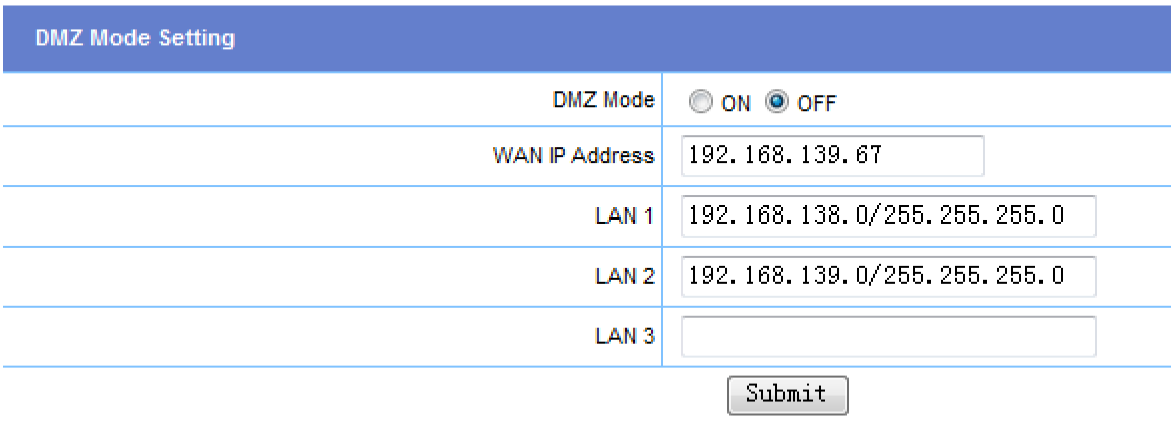
Time Unit： 60 (second)

This means when calling a number with 0 prefix (e.g., 01010086)，The rate is 15 cents for every 60 seconds , and the duration less than 60 seconds will be charged the same as 60 seconds. In addition, the prefix is for the longer one. For example, if there are rates for prefixes 0 and 00, the call number with 00 prefix will be charged per the rate of 00 instead 0.

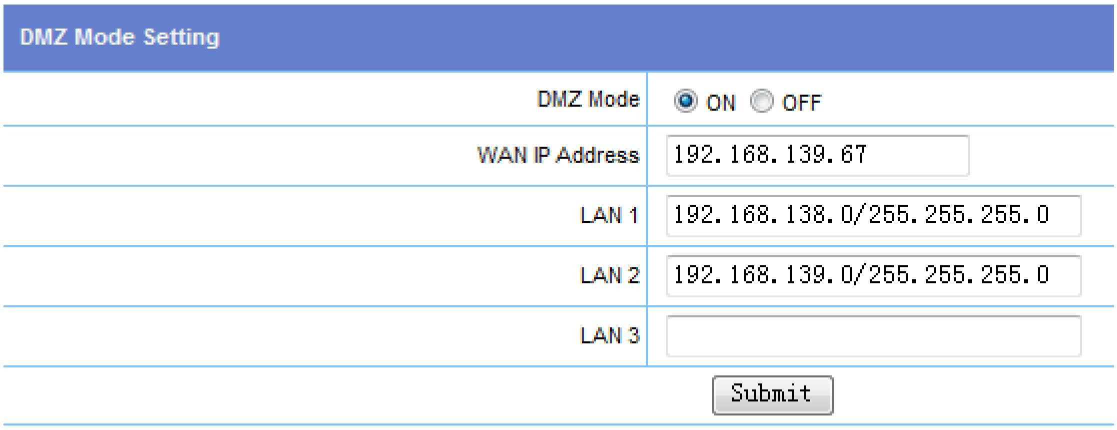
If there is no rate for the calling prefix, this implies the rate is 0.

8.2.3 DMZ Settings

DMZ (Demilitarized Zone) is used for firewall to send all the non-authorized incoming packets to the DMZ.



The DMZ must be set ON if the DMZ of firewall is activated.



Please follows the steps to configure the DMZ:

(1) Click on DMZ

(2) Set the DMZ IP or domain name URL

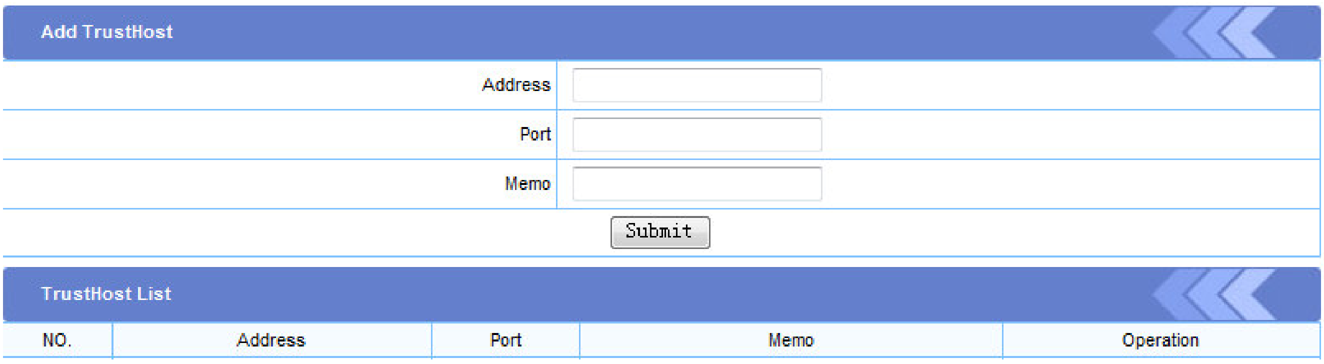
(3) Enter the Network IP and Subnet Mask

Example: 192.168.1.0/255.255.255.0

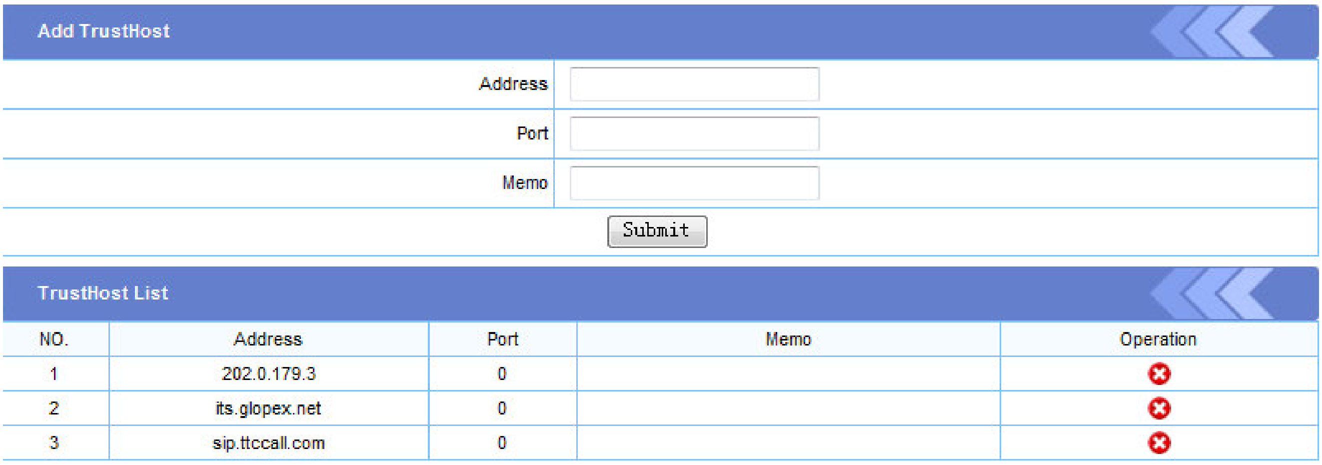
The step (3) is optional.

8.2.4 Certified Address

It is not need to have authentication from the call of certified IP Address. If the port is set at 0, all the ports from this certified address will not need authentications. The certified address could be either IP address or domain name.



The certified address can be added or deleted, and need to be configured in case of the following conditions;



(1) Need to work with FXO ports,

(2) Need to connect with xNode,

(3) Need to connect with another SIP Server.

In summary, the certified address can be set whenever the authentication is not needed.

8.2.5 Music ON Hold

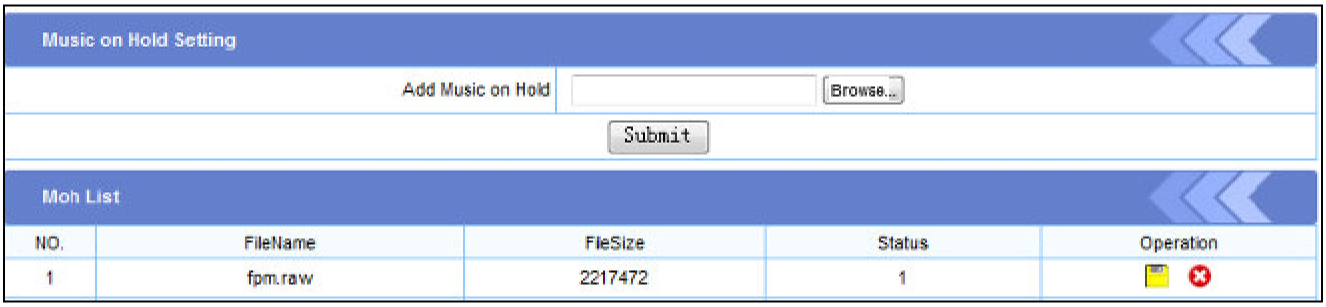
The IP PBX will play music when a call is on hold due to the following situations;

(1) When the call is transferred to attendant and waiting for answer.

(2) When the call is hold and waiting for answer.

(3) When the call is transferred and waiting for answer.

You may choose one of the music files for MUSIC ON Hold.



Music ON Hold requires a unique file format, and any MP3 files must be converted before upload for use of Music ON Hold.

8.2.6 Hot Lines

Hot line numbers can be entered into the list. Make sure all the holiness are not the same as any extension number or PSTN numbers.

For example, when an incoming call into the PBX with the prompt message "Press 1 for customer service, Press 2 for technical support, Press 0 for directory", then you may set as the following;

(1) Call hold 1 for customer service and connect extension 1;

(2) Call hold 2 for technical support and connect extension 2;

(3) Modified the prompt voice messages.

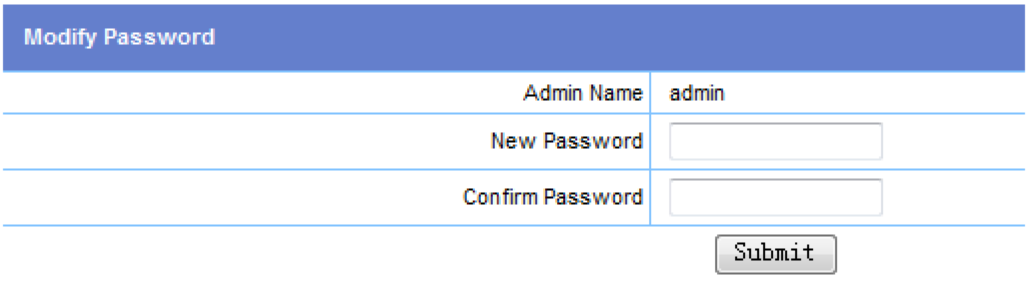
HotLine List

NO.	Description	HotLine	Operation
1	SwitchBoard	112	
2	CID Reader	117	
3	QueueManage Hotline	1600	
4	Functions Settings Hotline	1602	
5	My VoiceMail Hotline	1603	
6	VoiceMail Hotline	1604	
7	Conference Room1	1650	
8	Conference Room2	1651	
9	Queue1	1701	
10	Queue2	1702	
11	Queue3	1703	
12	Queue4	1704	
13	Operator Setting Hotline	1801	
14	Operator	9	

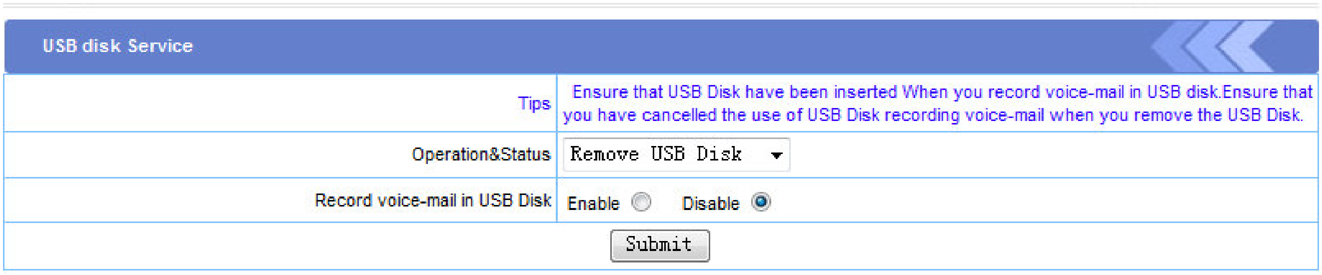
Modify HotLine

Description	Operator Setting Hotline
Current HotLine	1601
New HotLine	
	Submit

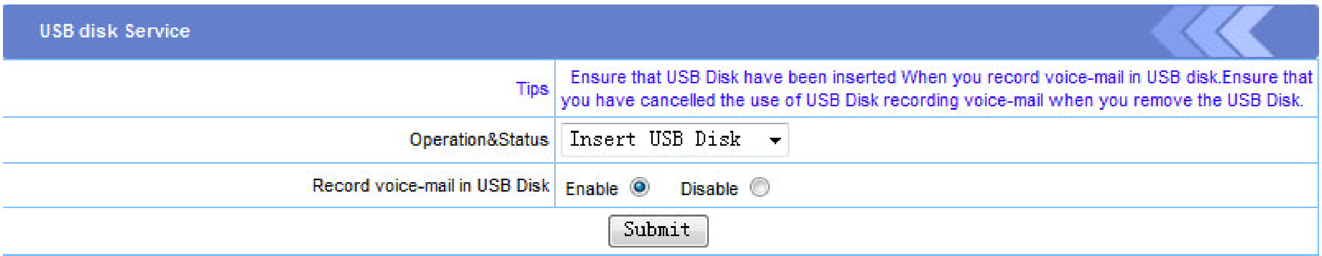
8.2.7 **System Auth**



8.2.8 USB Disk Setting



When you need to store the voice mails, please do the steps as follows;



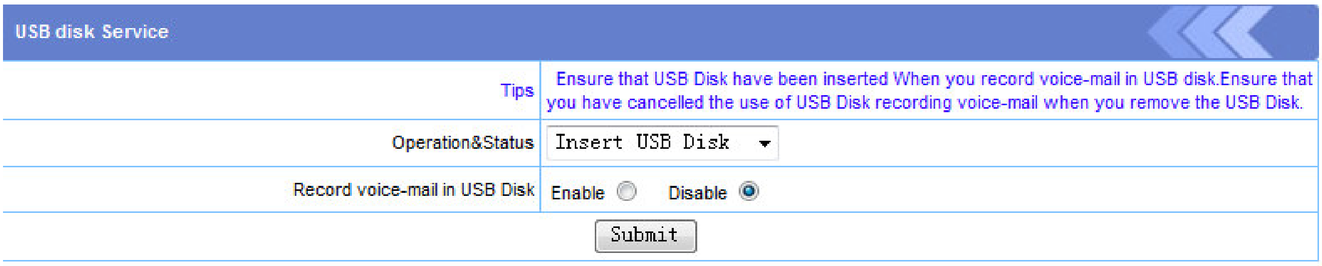
(1) Insert USB disk

(2) Select “Insert USB Disk” in the current status

(3) Select Yes to enable USB voice mail recording.

(4) Click Submit button.

When the voice mails is not needed, please do the steps as follows;



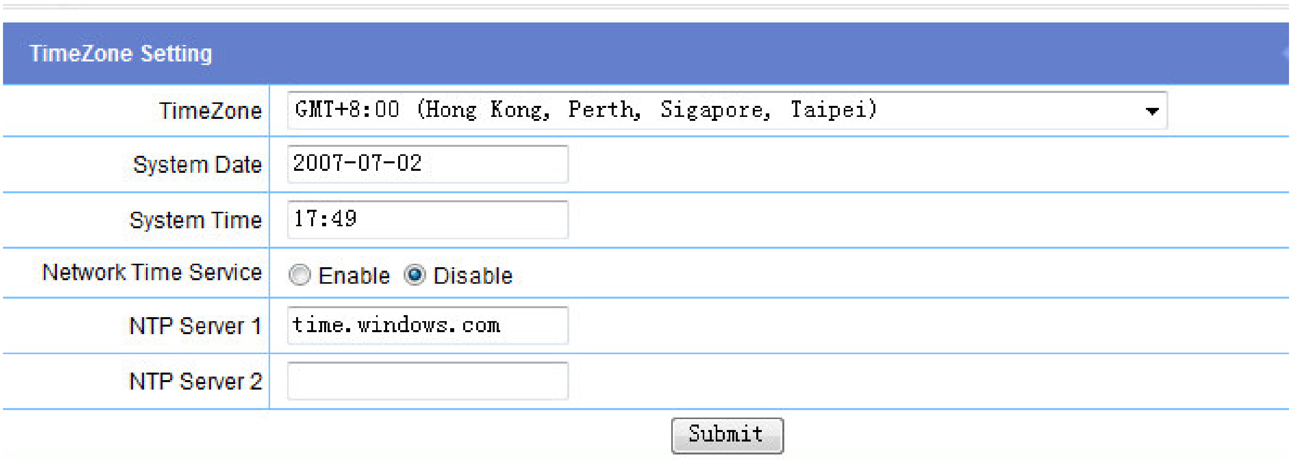
(1) Select “Insert USB Disk” in the current status

(2) Select No to disable USB voice mail recording.

(3) Click Submit button.

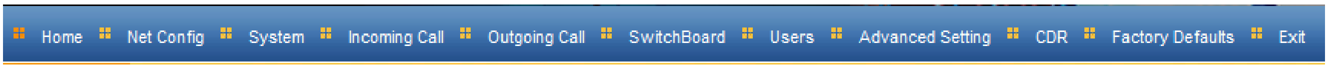
(4) Pull out the USB disk.

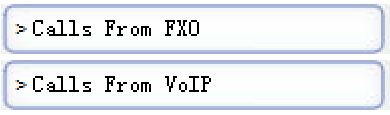
8.2.9 Time-Zone Setting



8.3 Incoming Calls Settings

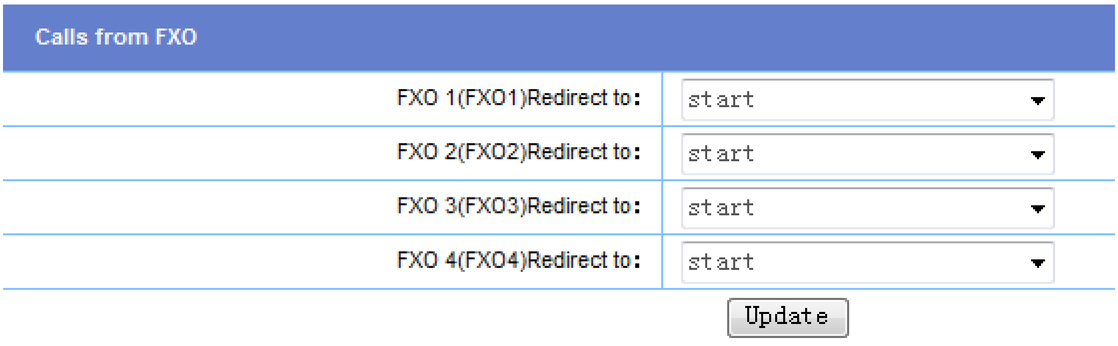
The IP PBX provides two ways of incoming calls; one is from local PSTN through the FXO ports, and the other is from the calls from ITSP. In some case, the ITSP may provide the real PSTN numbers for the IP PBX from the VoIP.

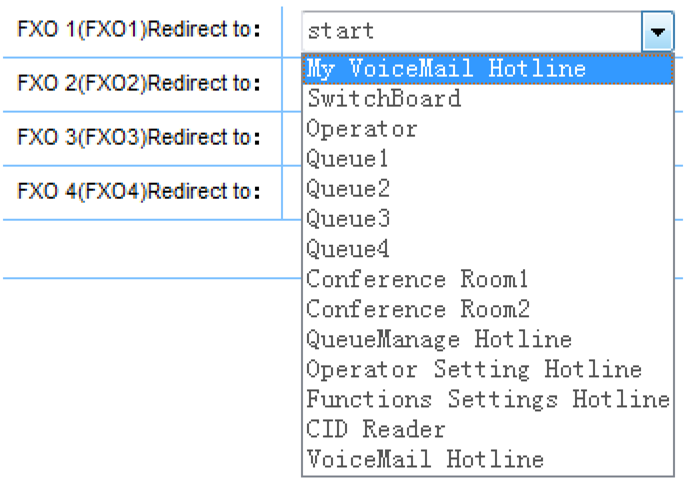




8.3.1 Calls from FXO ports

The IP PBX provides 4 FXO ports to allow PSTN incoming calls. For any PSTN incoming calls, you may configure to redirect to either switchboard, extension number, or conference room, etc.

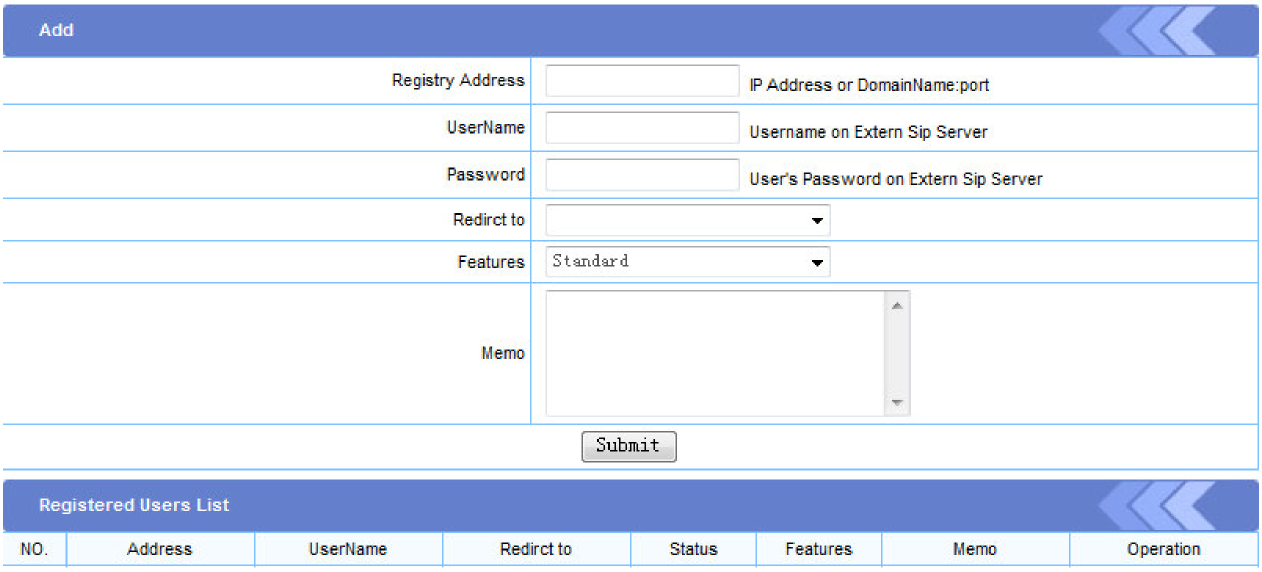


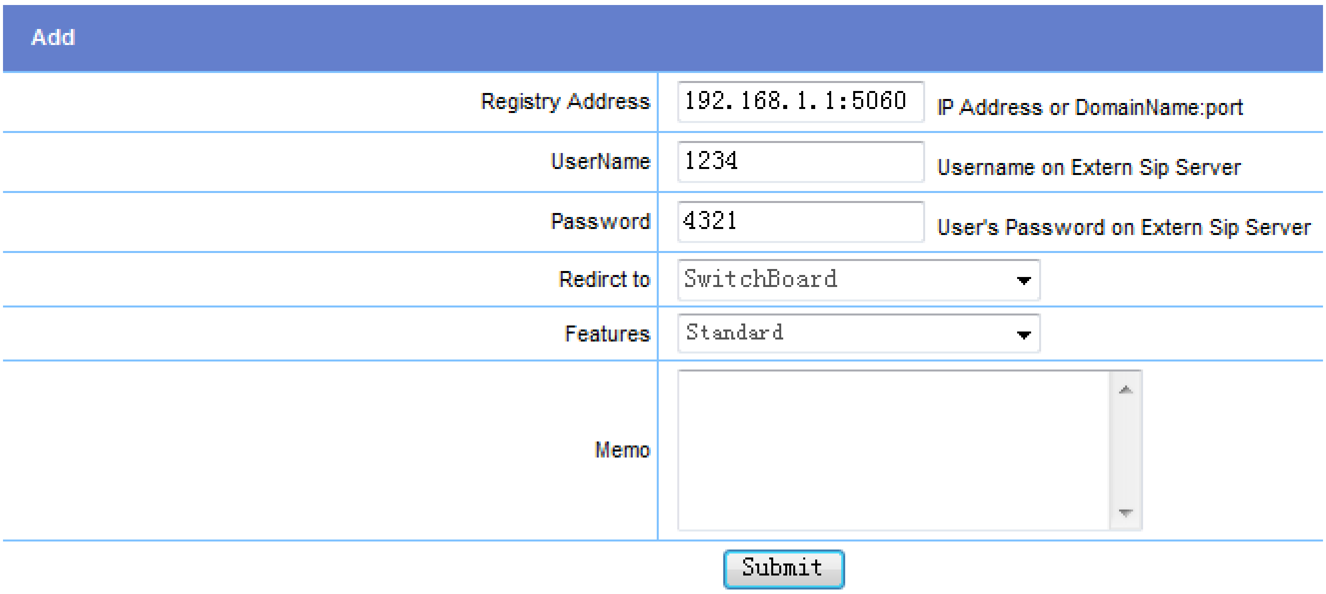


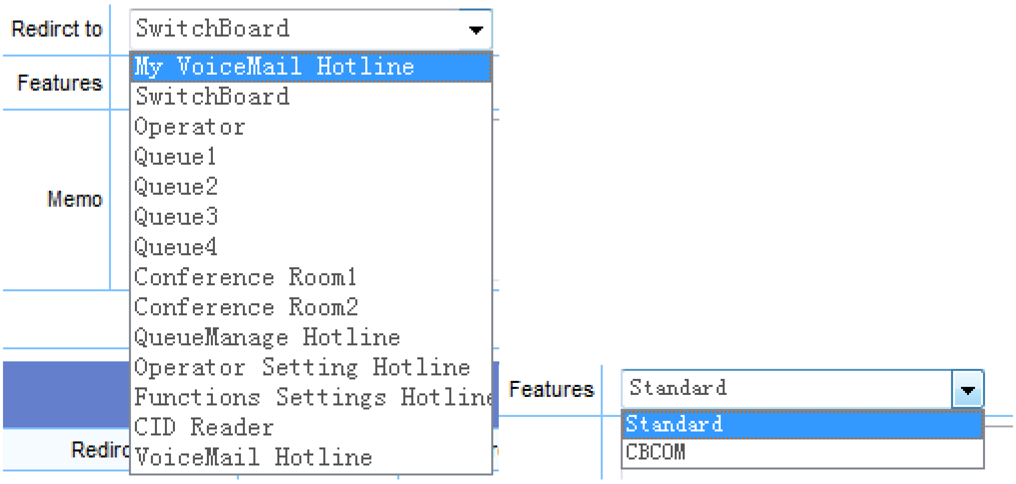
8.3.2 Calls from VoIP

The IP PBX can register as a terminal CPE into another VoIP server. When an external VoIP call to this IP PBX, you may also redirect to either switchboard, extension number, or conference room, etc.

- Registry: SIP Registration Server IP/URL: Port number
- User Name:
- Password:
- Redirect To: switchboard, extension number, or conference room

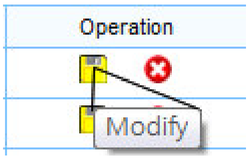


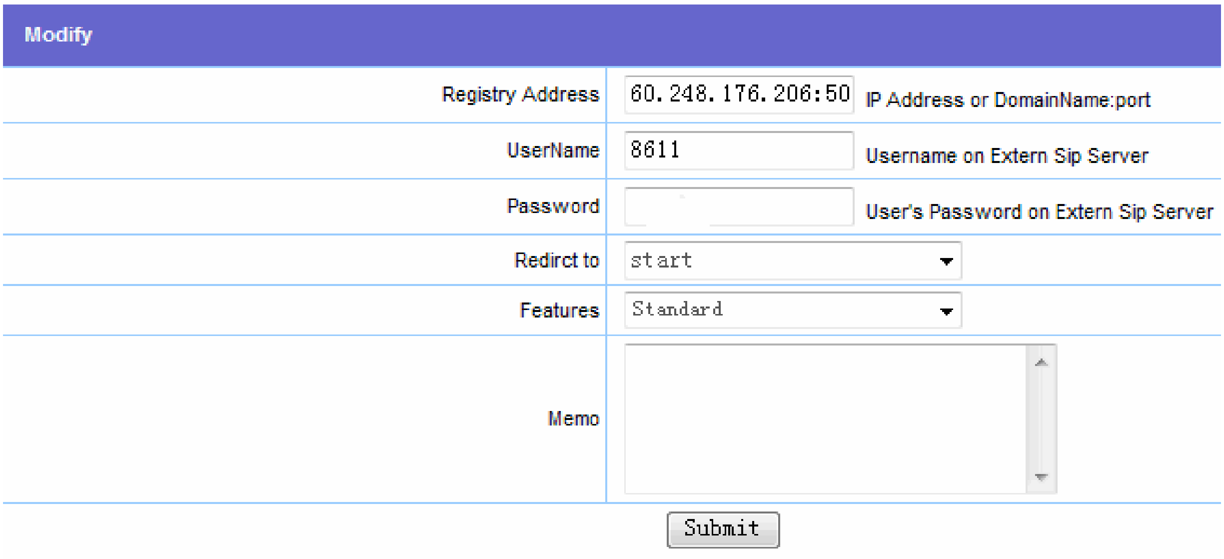


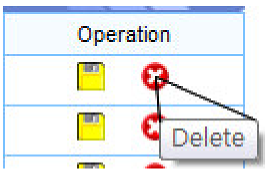


Registered Users List

NO.	Address	UserName	Redirct to	Status	Features	Memo	Operation
1	60.248.176.206:5070	8611	start	Register Succ	Standard		

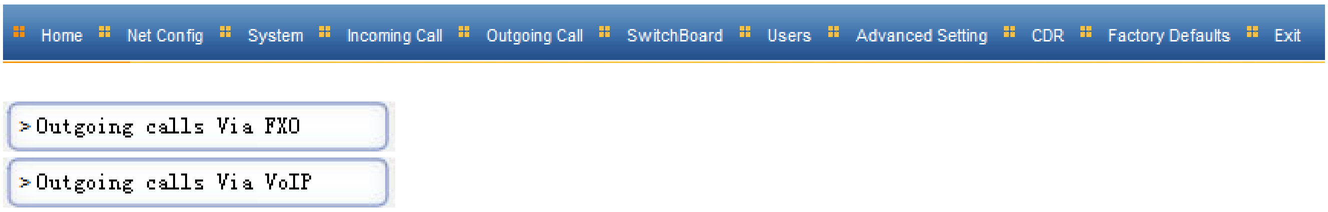






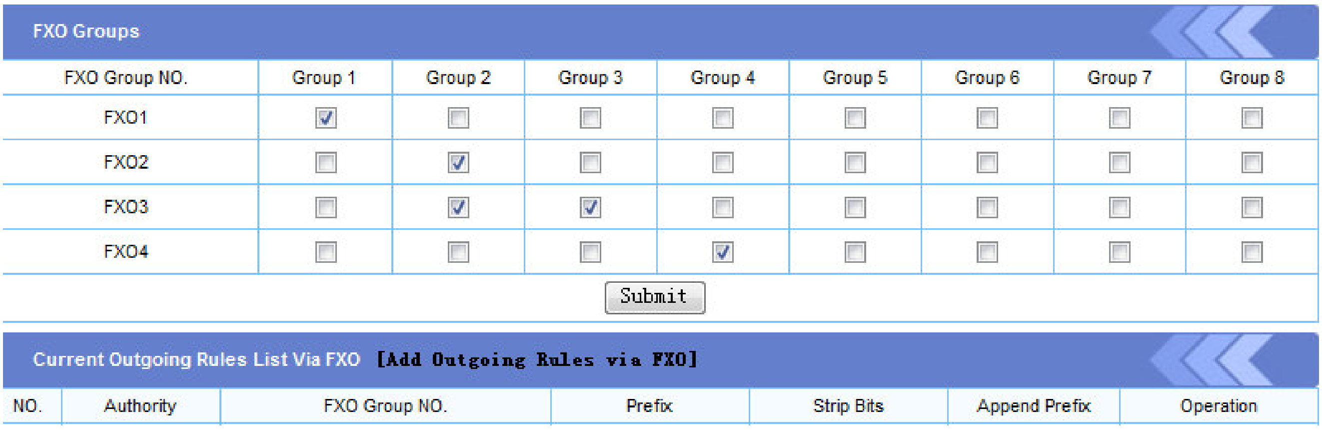
8.4 Outgoing Call

The IP PBX provides two kinds of outgoing calls; one is via FXO port to local PSTN lines, and the other is via VoIP calls. The settings are as follows:



8.4.1 Outgoing Calls via FXO ports

The IP PBX is equipped with 4 FXO ports for connection to local PSTN lines. All the extension number can then make outgoing call to local PSTN numbers. You need to assign the group number to each of the FXO port to activate the FXO outgoing PSTN line. If any FXO port is not assigned any group number, the outgoing call for this FXO port will be prohibited and only incoming calls can be accepted. For outgoing calls, you need to specify the group number for calling PSTN numbers, and the IP PBX will select one of the available FXO ports from the group to make an outgoing calls. This make the grouping become flexible in outgoing calls.

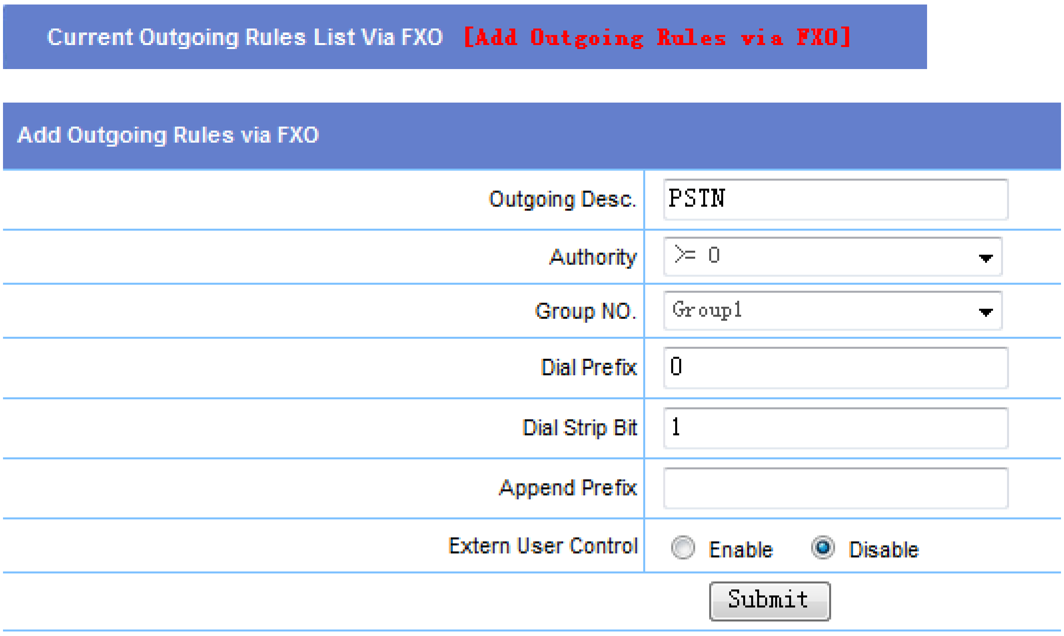


FXO Group NO.	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
FXO1	✓							
FXO2		✓						
FXO3		✓	✓					
FXO4				✓				

NO.	Authority	FXO Group NO.	Prefix	Strip Bits	Append Prefix	Operation

Having set the rules for local outgoing PSTN calls, the authority is used to restrict the call. For example, for authority >=5, only the user extension number with authority >=5 can make an outgoing call through the FXO ports in this group.

The user extension prefix is used to indicate the group number for making an outgoing call. The delete digits is used to delete the group number with additional prefix before the dialing string. The external use is to allow the external user to use the same rule for redial out to local PSTN numbers, when calling into the IP PBX.



Example: When one user press 056789 to apply the outgoing rule, the IP PBX will use one of the FXO port in the group 0, delete 0 (one digit), then add the prefix 024. The final dialing string will be 02456789 to the PSTN line.

8.4.2 Outgoing Calls via VoIP

The EP520 IP PBX can make a VoIP call to the user of another remote EP520. The user of the remote IP PBX can be either extension number or its PSTN numbers.

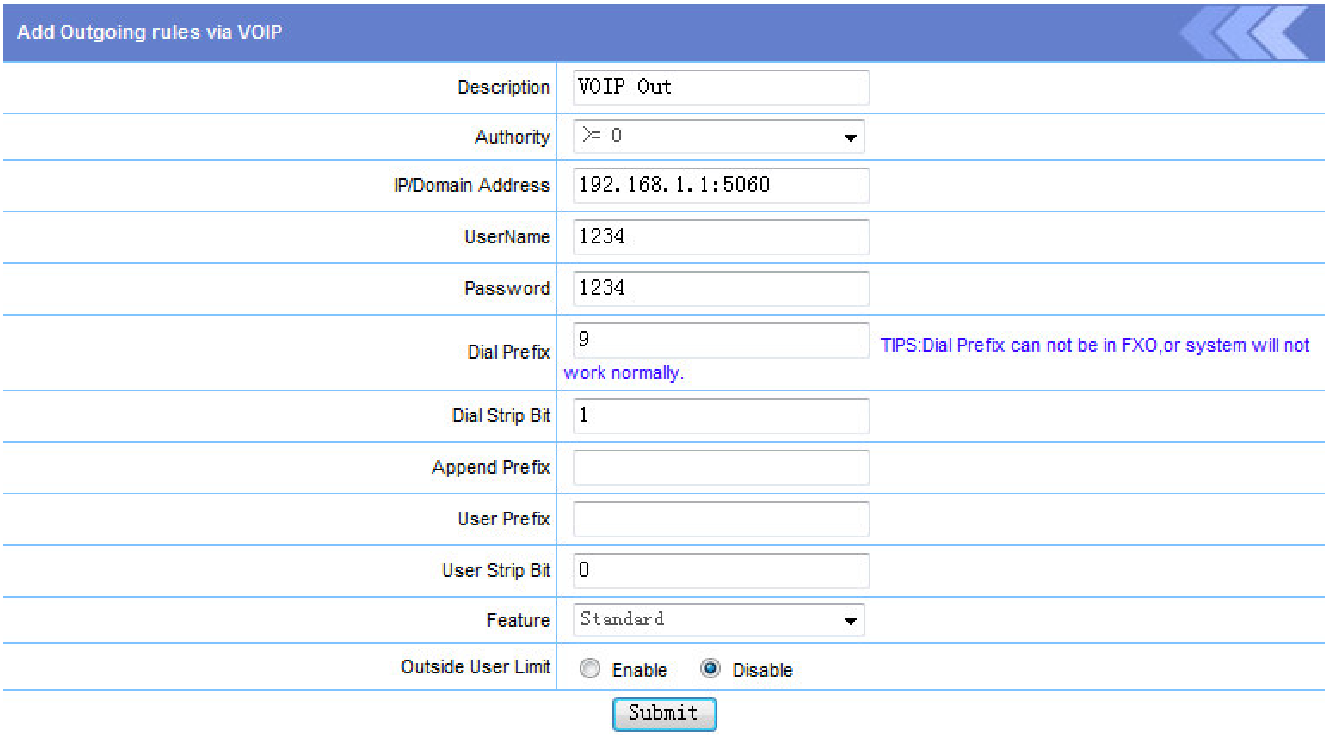
There are two ways to connect to the remote IP PBX:

(1) The remote IP PBX provides an account name and password. Our IP PBX will make outgoing call authentication.

(2) The remote IP PBX configures our IP PBX as certified address. All our calls to the remote IP PBX will be accepted without authentications.

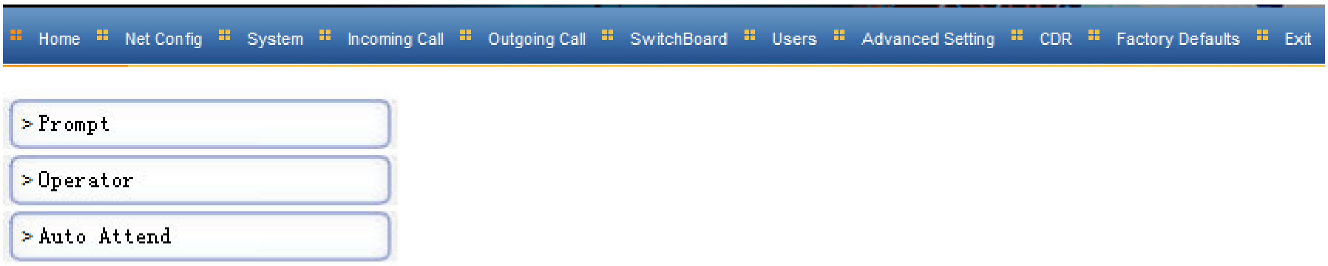
For the first way, the number we send from our IP PBX are the users number provided by the remote IP PBX.

For the second way, the number we send from our IP PBX will be modified by the remote IP PBX per its rule. It will be much more convenient by this way to make calls between the two IP PBXs.



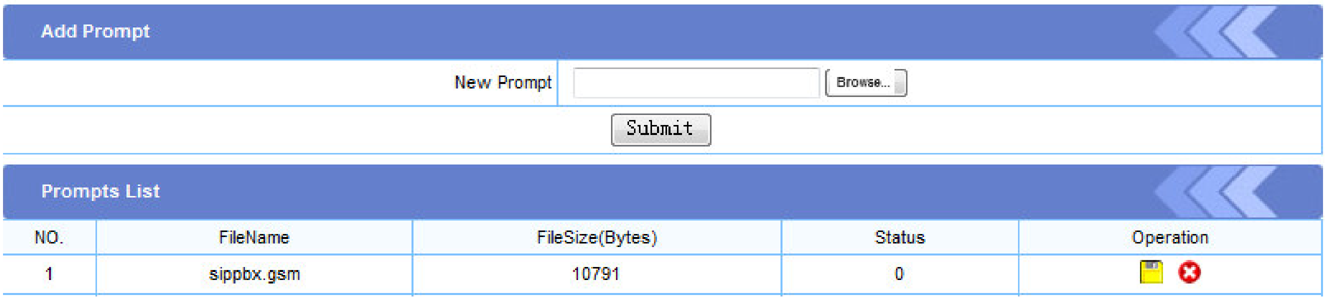
8.5 SwitchBoard (Auto Attendant Settings)

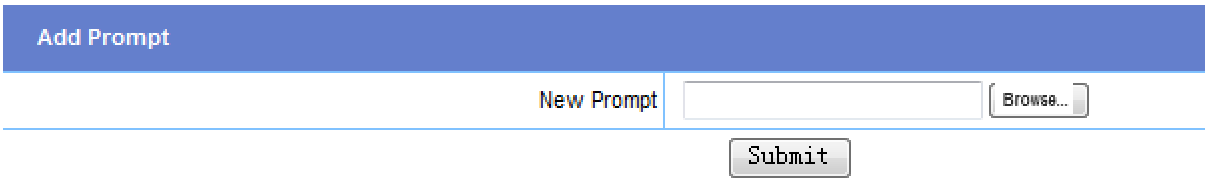
The IP PBX provides an Auto Attendant for user to call. When receiving an incoming call, the auto attendant will play a welcome prompt message or call another extension number. The settings include welcome prompt message, operator, and auto attend.



8.5.1 Prompt Message

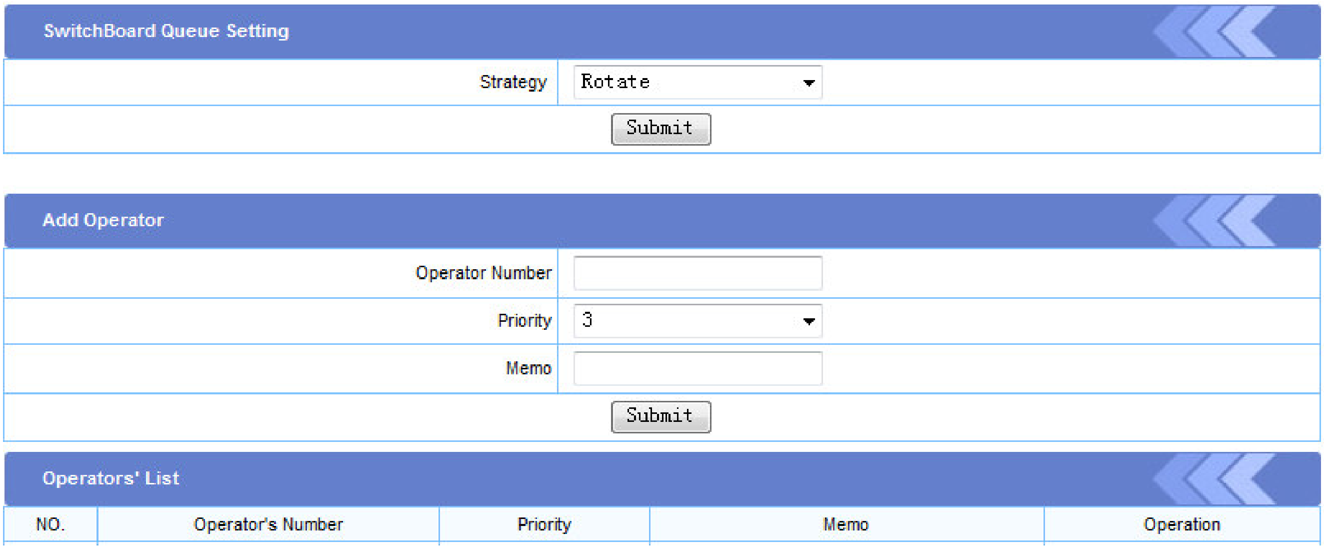
You may choose the prompt message for the auto attendant to play while receiving incoming calls. You need to upload the messages to the prompt list for setting choices.





8.5.2 Operator Settings

When a transfer call can not be transferred to the desired extension number, the call will be transferred to operator. The operator can be any extension or PSTN number with assigned priority, and the call will be forwarded by priority.



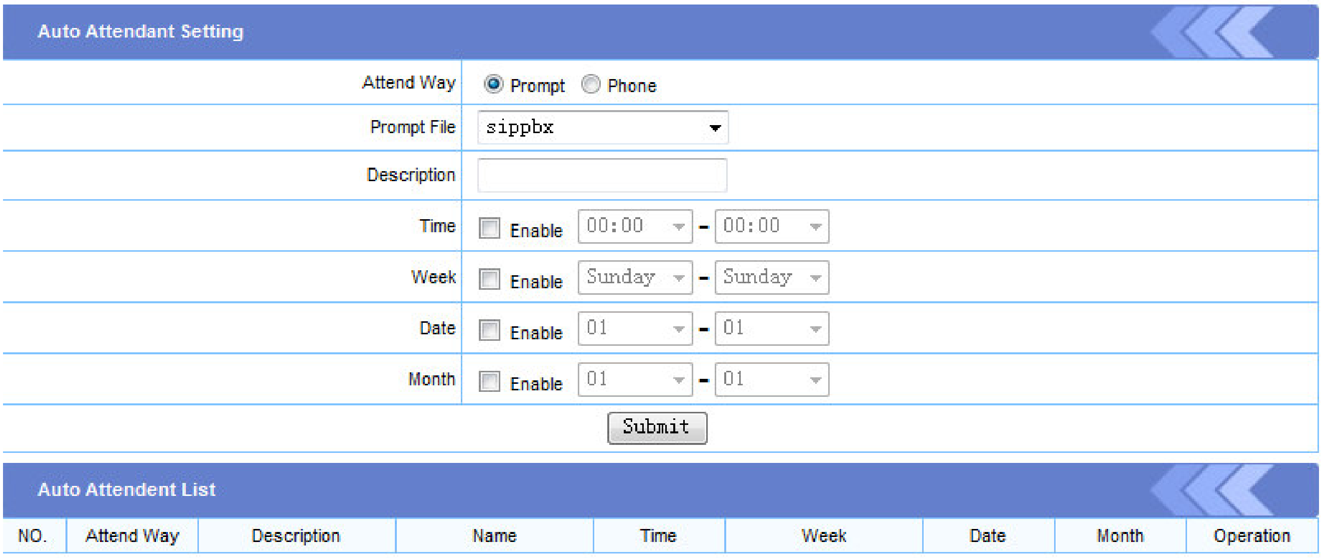
8.5.3 Auto Attendant

Auto Attendant will handle all the incoming calls when no one can answer in the company. There are two ways of answer; Answer by phone, and answer by machine with playing answering prompt messages.

(1) Answer by Phone: All the incoming calls will be transferred to the preset phone number. The phone number can be either extension number or PSTN number.

(2) Answer by machine: An answering prompt message will be played to answer the incoming call. Make sure the answering message is uploaded and chosen.

The IP PBX provides many options for time durations. If the time durations are not set, the handling incoming call will be always effective.



8.6 Users Management

This section describes the account opening, closing, and management. The extension number (also known as user name) must not exceed 32 digits. For easy management, it is recommended to assign different prefix number for different departments.

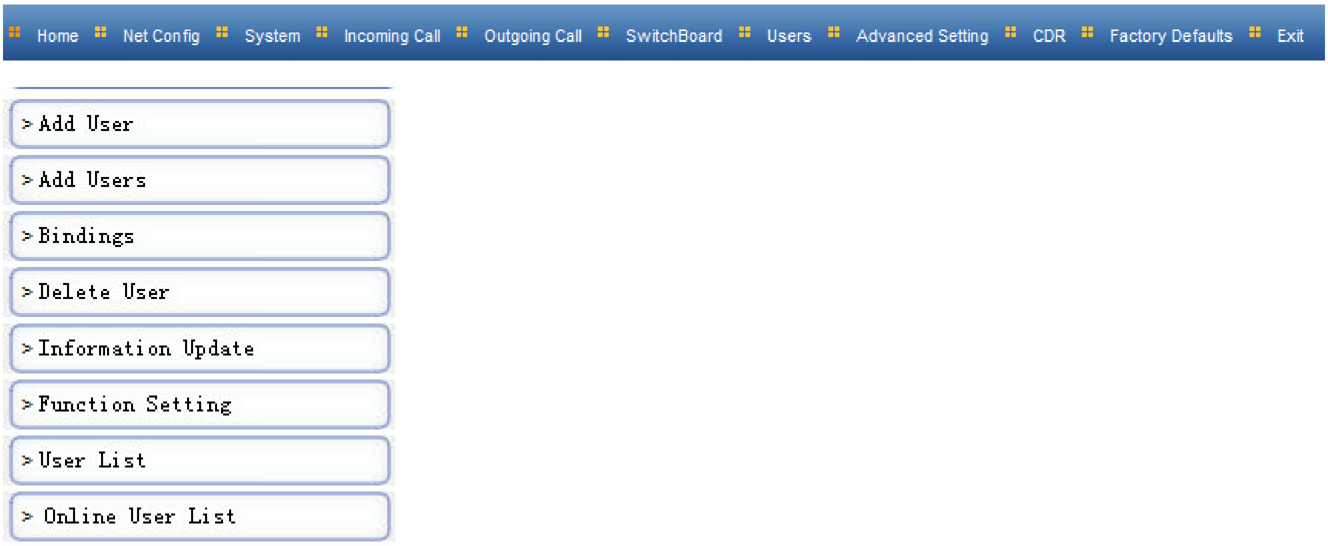
A user number should have the following;

(1) **User name:** The user name is a string of number digits with length less or equal to 32. For easy management, it is recommended to assign different prefix for different departments.

(2) **Password:** Every user name will have its own password with length less than or equal to 32 alpha-numeric digits. The CPE VoIP phone must use the same password for authentications.

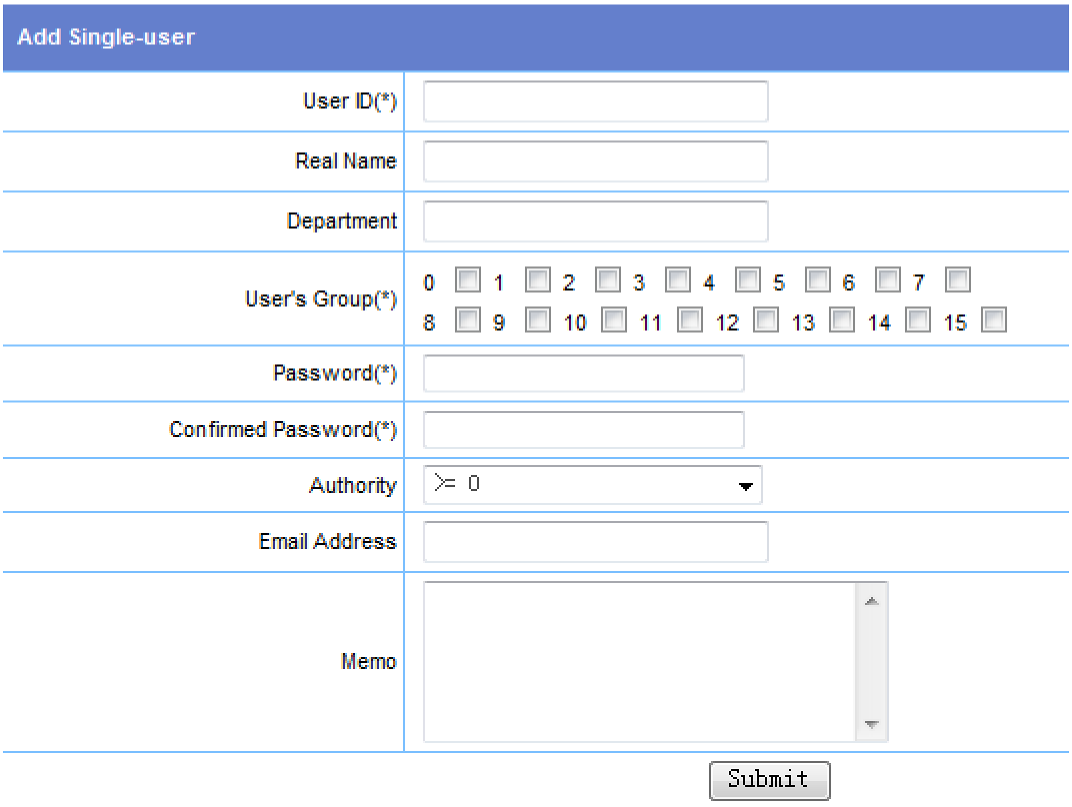
(3) **Call Authority:** from 0-15. This is used to restrict the call authority. The user authority must be equal or greater than the predefined authority to make the defined outgoing calls.

(4) **User Group:** Each user name can belong to one or multi-groups. User can answer incoming calls for another user within the same group by pressing "***8**". There are 16 groups can be assigned.



8.6.1 Single User Account Opening → Add User

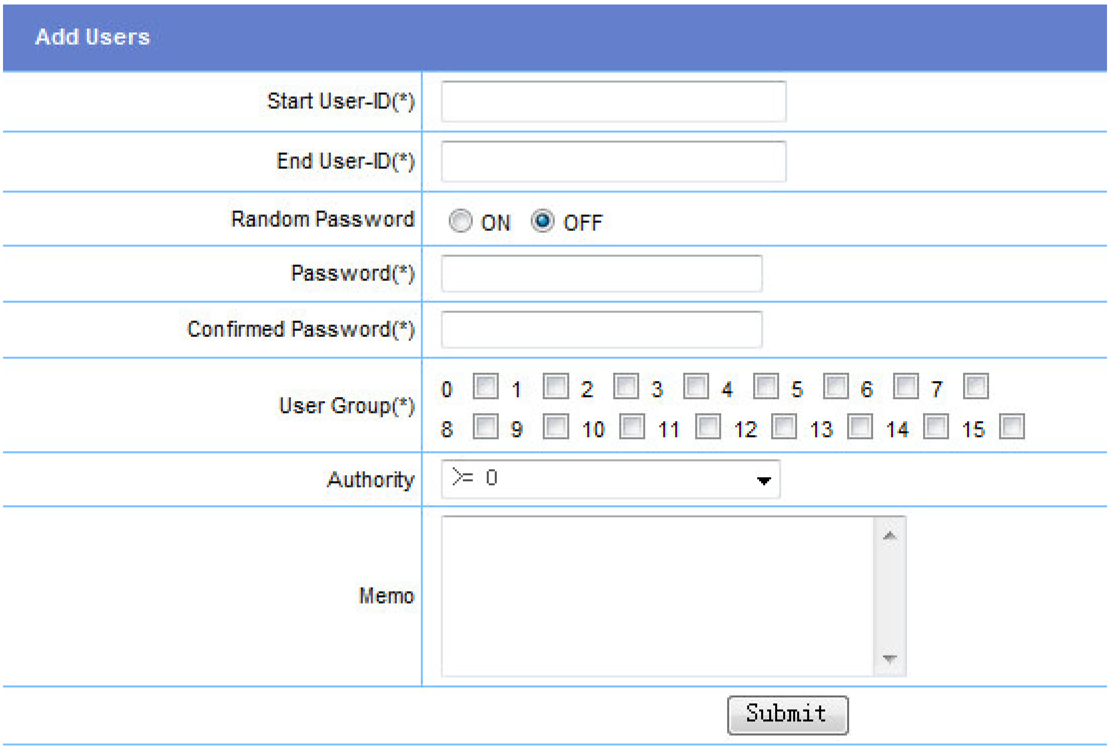
You may add single user account in this section by entering user name, password, groups, and call authority.   Remember the length should not exceed 32.



Note: when the number of registered users reach the limit, the function of add user will not work.

8.6.2 Group Users Account Opening→ Add Users

You may create group users accounts and assign group numbers with priority to all the accounts. You may also assign password to each account or generated by IP PBX.   After settings, you may display all the created accounts.



8.6.3 Bindings

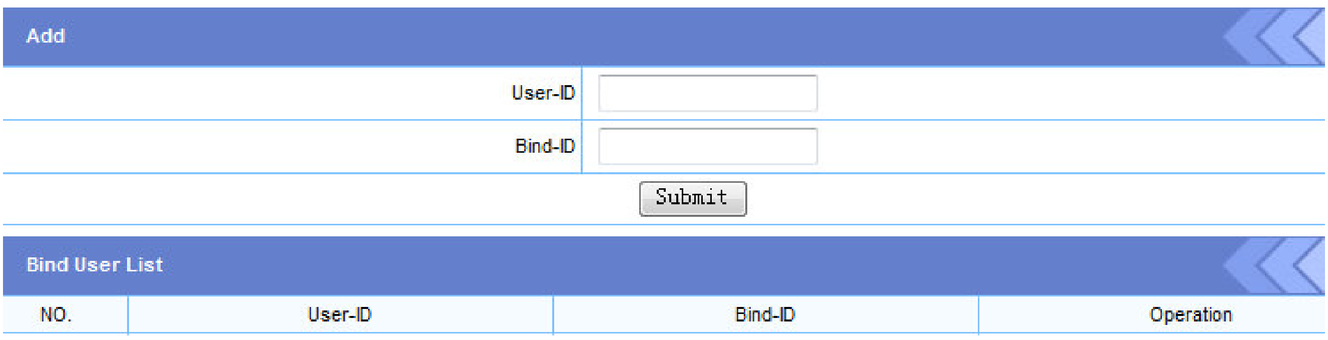
Extension binding is used to bind many extension numbers together as a group. When calling to one of the extension, the other binding extension will ring as well. This is also referred to as Group Ringing.

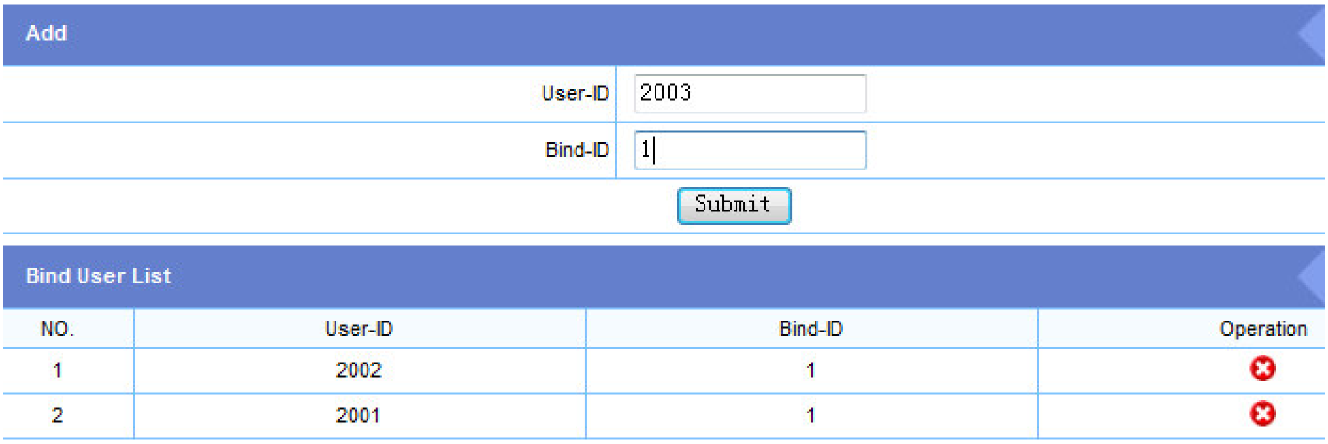
(1) User name: To enter extension number.

(2) Binding group number: Enter the binding group number. The extension number with same binding number will belong to the same binding group.

(3) The binding list will display the extension numbers.

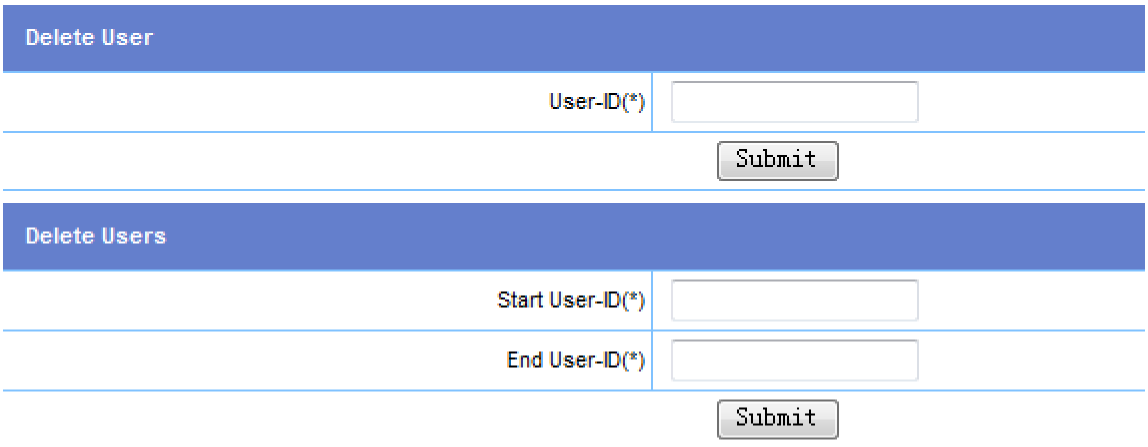
Note that one extension number can belong to multi-binding groups.





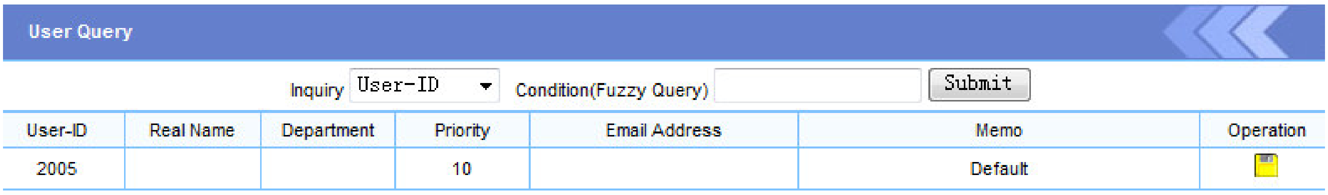
8.6.4 Delete User Accounts

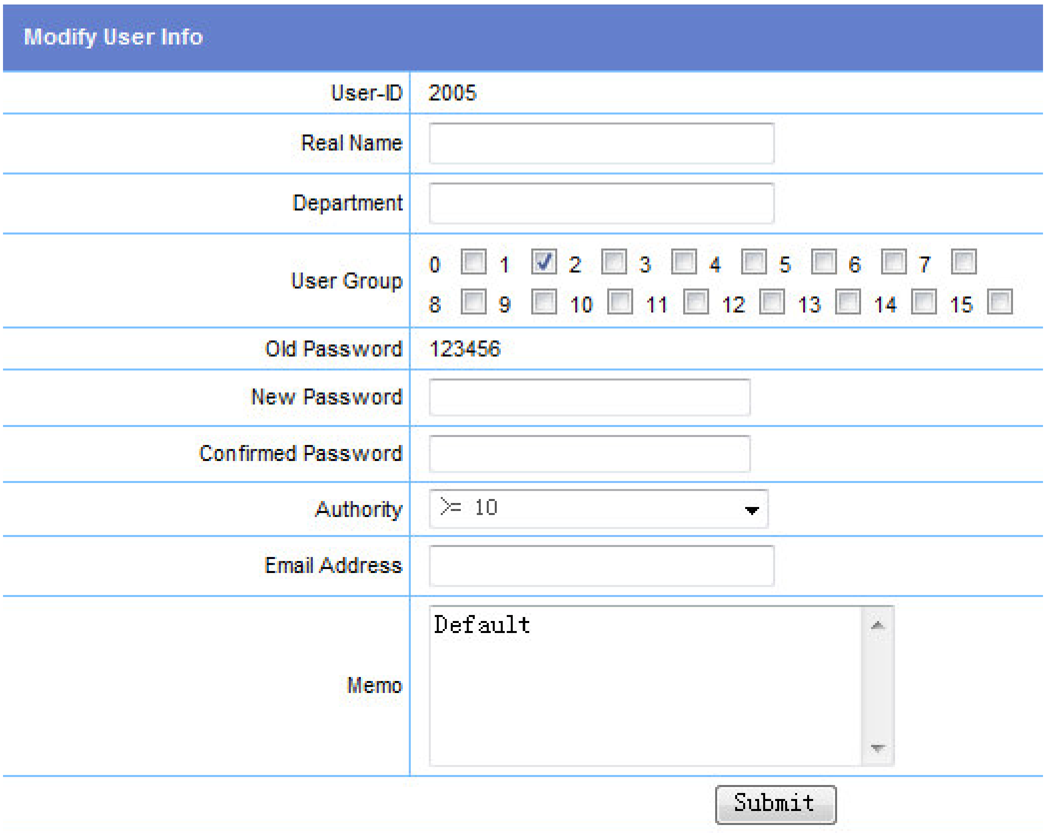
There are two ways for user account deletion; one is for single account deletion, and the other is for group account deletions. For single account deletion, you need only to enter the extension number. For group account deletions, you need to enter a range of extension numbers. The IP PBX will delete all the user information for the extension within the range. Note that the information will not be recovered once deleted.



8.6.5 User Information Update

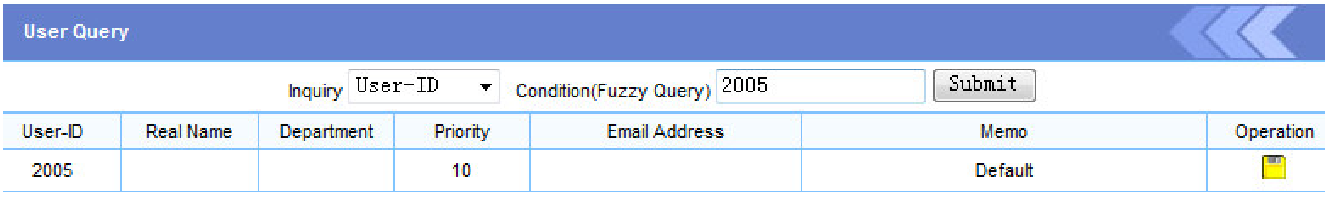
In this section, you may modify password, name, department, authority and group.

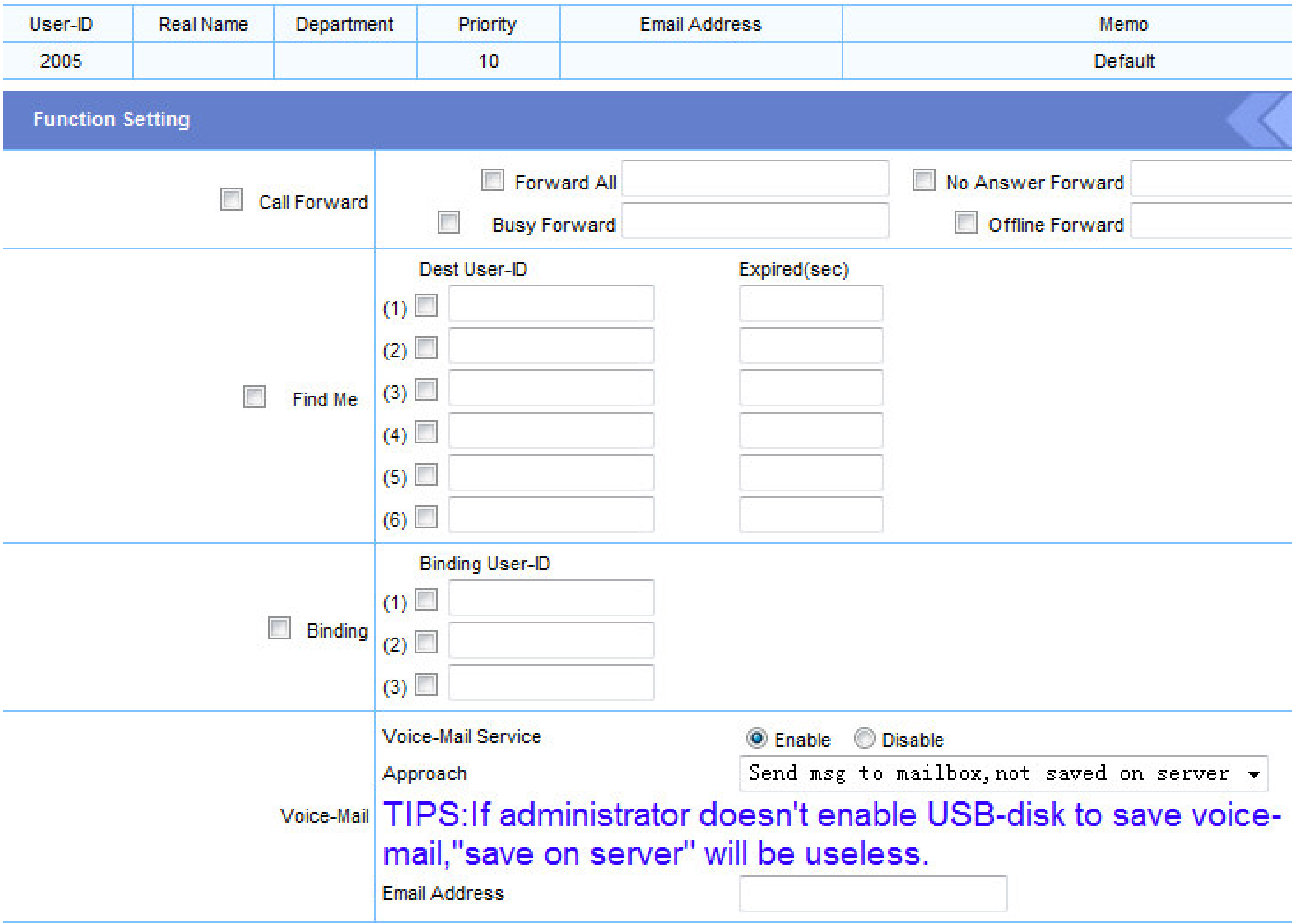




8.6.6 Function Settings

There are three functions provided as follows;





(1) Call Forward

- Unconditional Forward: Any incoming call to this extension will be forwarded directly to the set extension number.
- No-Response Forward: When no answer in one minute, the call will be transferred to the set extension number.
- Busy Forward: When busy, the new incoming calls will be transferred to the set extension number.
- Off-Line Forward: When the extension number is off-line (unregistered), all the incoming call will be transferred directly to the set extension number.

(2) Follow Me

When one user is set for "Follow Me", the call will be transfer to the first extension number when no answer for the incoming call. If no answer again, the call will be transferred to the next extension number until the call is answered. The maximum is 5 extensions numbers. After that, the call will be disconnected.

(3) Telephone Binding

The telephone binding is to bind the extension number with a PSTN number. For incoming call to the extension number, the PSTN phone number will ring simultaneously.

(4) Voice Mail

You may enable the voice mail for extension numbers.

Note :
(1) Every user may select only one at a time out of the three functions.
(2) You need to check on the icon to select the desired function.
(3) The dialing number must follow the rules for outgoing calls.

8.6.7 User List

There are two kinds of list; one for all the users, and the other for the on-line registered users.

All Users List

NO.	User-ID	Real Name	Password	Group NO.	Authority	Call Features	Operation
1	2005		123456	1	10	Normal	
2	2006		123456	1	10	Normal	
3	201	Maggie	201	1,	10	Binding	
4	2010		123456	1	10	Normal	
5	202	JoneOffice	202	1,	10	Binding	

The list will show the current setting status for each user as follows;
(1) Normal
(2) Unconditional Transfer
(3) Call Transfer; including busy, off-line, and no answer transfer.
(4) One number Through
(5) Telephone Binding

You may modify and update all the user settings directly from the entry of the list.

8.6.8 On-Line User List

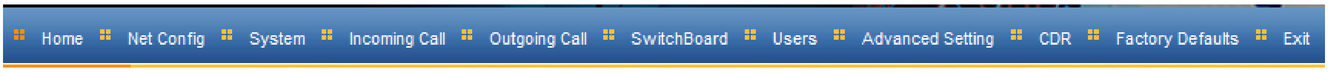
The on-line users are for the current registered users.

Current OnLine List

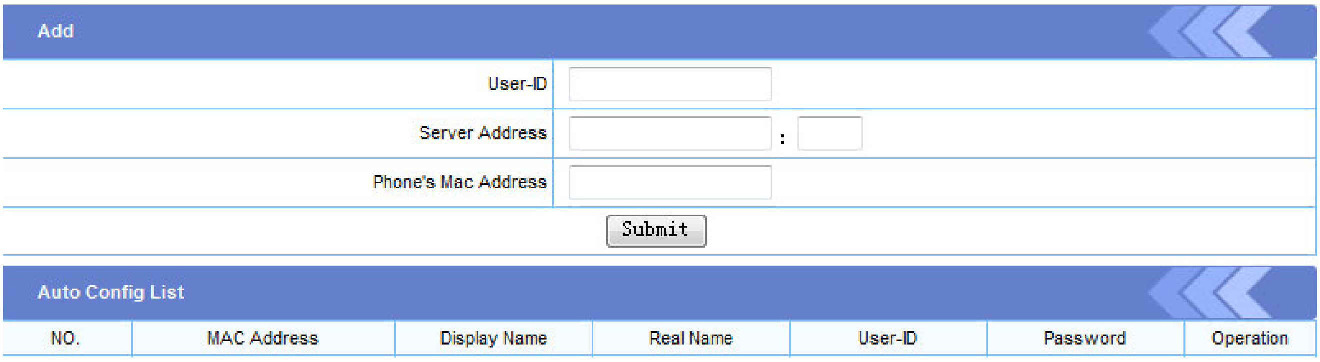
NO.	User-ID	Real Name	Department	UA Info	IP Address
1	2005			VS211	192.168.62.137
2	208	IrvingOffice	208	VOIP_PHONE	192.168.62.149
3	201	Maggie		VOIP TA	192.168.62.121
4	202	JoneOffice		VP301	192.168.62.182

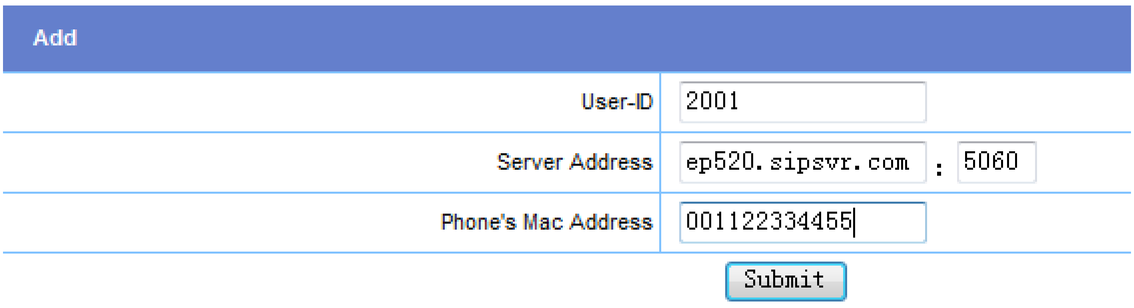
8.7 Advanced Settings

The advanced Settings cover some call waiting, voice conference rooms, and IVR upload process.



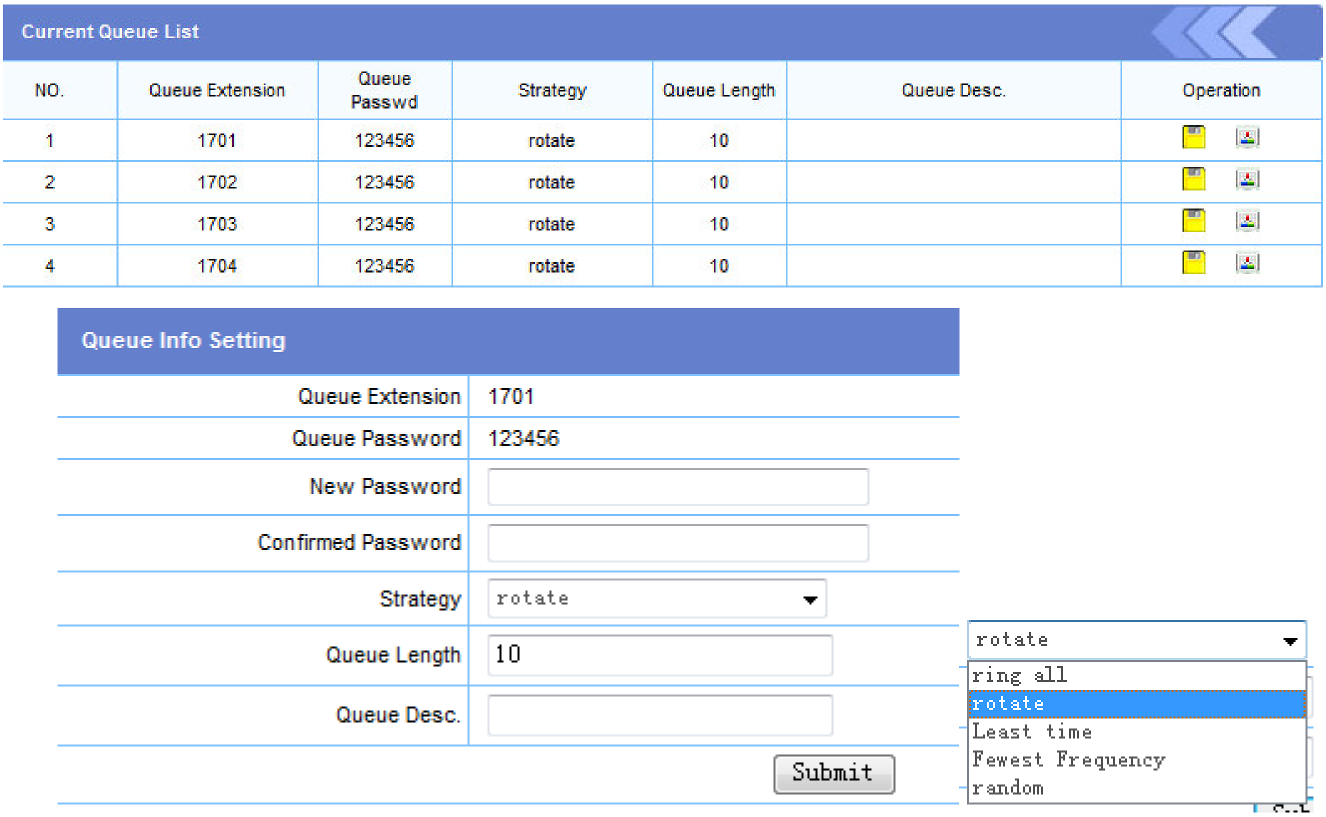
8.7.1 Phone Self Config

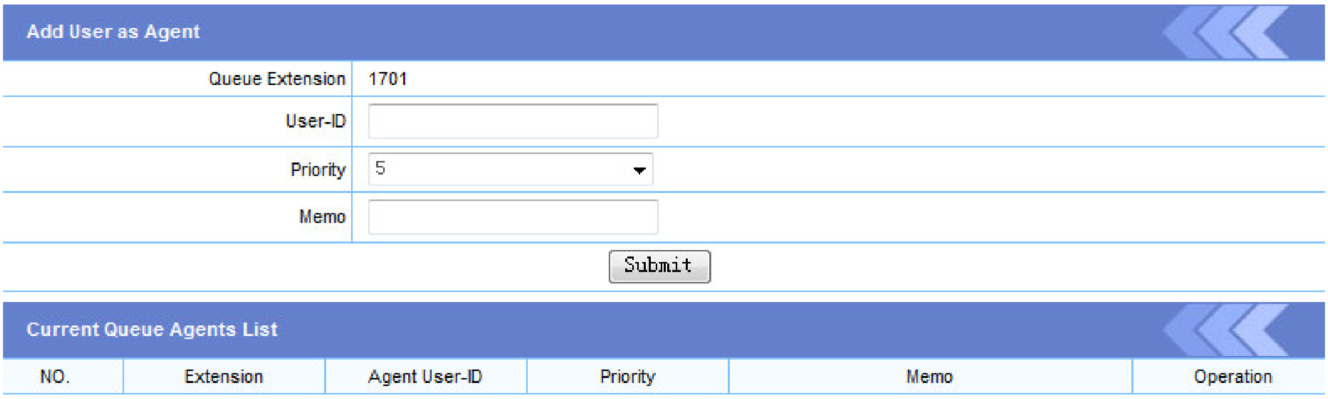




8.7.2 Queue Settings

Call waiting is to queue all the incoming calls and to assign based on rules to the desired extension numbers. If all the available extensions are busy, the system will play the waiting music for the queuing incoming calls. Once available, the system will connect to the desired extensions.





The IP PBX provides 4 call waiting queues. The waiting queues can be set to a simple calling center, and the user may define individual waiting queues for its own purpose.

The waiting queues can be configured by the IE Web browser to define the functions as follows;

(1) Update new incoming calls;

(2) Setting the password

(3) Set the desired extension

(3) Set the waiting time length

(4) Add/Delete waiting number

Functions:

1） Update the call waiting list

2） Modify the call waiting information

The call waiting password will be required when the call is entering the waiting queue.

For each waiting call, the IP PBX may provide one of the following call assignment:

(1) Round-Robin: for any incoming call, the call will be forwarded to the next extension number.

(2) Random: The incoming call will be randomly assigned to the extension numbers.

(3) The least-answer: the new incoming call will be transferred to the extension with the least answering.

(4) The longest idle: the new incoming call will be transferred to the extension with the longest idle time.

(5) All Ringing: the new incoming call will ring all the extension numbers. Anyone pick up the phone will answer the call. Waiting length means the maximum numbers for call waiting.

3） To Add/Delete the waiting list

The user may add/delete the call waiting queues.

8.7.3 Voice Conference Rooms

The IP PBX provides two standard voice conference rooms. The details are as follow;

Current Conference Room List

NO.	Conf. NO.	Conf. Passwd	Admin Passwd	Extension	Max. Number	Status	Memo.	Operation
1	001	123456	654321	1650	10	Idle		
2	002	123456	654321	1651	10	Idle		

(1) Conference Room Password

When a user calls to the conference room, he will be required to enter the password, or the call will be denied. It is recommended to set the password for the conference room.

Please refer to the conference room setting for password.

(2) Maximum attendants of conference room

If set at 0, it has no limitation. Please refer to the conference room settings.

(3) Web Control of Conference Room

Current Attendance List

NO.	Conf. NO.	Attendance User-ID	Attendance Name	Status	Operation
1	C001	208	IrvingOffice	Listen&Talk	
2	C001	2208	2208	Listen&Talk	

Current Attendance List

NO.	Conf. NO.	Attendance User-ID	Attendance Name	Status	Operation
1	C001	208	IrvingOffice	Listen&Talk	
2	C001	2208	2208	Listen&Talk	Listen&Talk

Current Attendance List

NO.	Conf. NO.	Attendance User-ID	Attendance Name	Status	Operation
1	C001	208	IrvingOffice	Listen&Talk	
2	C001	2208	2208	Listen&Talk	Listen

Current Attendance List

NO.	Conf. NO.	Attendance User-ID	Attendance Name	Status	Operation
1	C001	208	IrvingOffice	Listen&Talk	
2	C001	2208	2208	Listen&Talk	Kick out

There are three icons for the three operation functions;

(1) The extension numbers are in conversation dialog status

(2) The extension is in monitoring status.

(3) Kick out the extension number. The extension will be forced out in 5 minutes.)

(4) IVR Control of Conference Room

The user after entering the conference room may press * key for an IVR playback. The user may interact with the IVR messages.

General User Extension:

1) Make oneself mute. The user voice will not be heard in the conference room. To let one's voice heard in the conference, just repeat the same procedure as mute. Press * key for an IVR playback, then press 1 key to resume conference attending.

2) Make oneself manager. The user needs to enter the manager password. Please refer to conference room settings for the manager password.

Manager has the following functions:

1, Make oneself mute. The user voice will not be heard in the conference room.

2. Make the current conference room in lock, and any user trying to enter the conference room will hear the prompt message "**Conference Room is in Lock**", and get disconnected. To unlock the conference room, simply repeat the same procedure in lock. That means to press * first, and then press 2 to unlock the current conference room.

3. To kick out all the general users. (Note that all managers will not be kicked out.).

4. To mute all the general users. All the general users in the conference room will not be able to speak but to listen only.

5. To disable mute all the general users. All the general users in the conference room will be able to speak and listen. (Note that if the user mutes oneself he needs to disable mute by himself to speak in the conference room. The manager can not disable mute for the user.)

6. Conference Invitation.

If you want to invite an outside user to join the conference room, you may follow the step by the IVR message operations. This outside user can be registered in the IP PBX or the PSTN number.

Note: Conference invitation is making an invitation only and do not acknowledge if invitation is successful or not. If not successful, the invitation will repeat after 60 seconds. If not successful after three times of conference invitation, the invitation will stop without any notice.

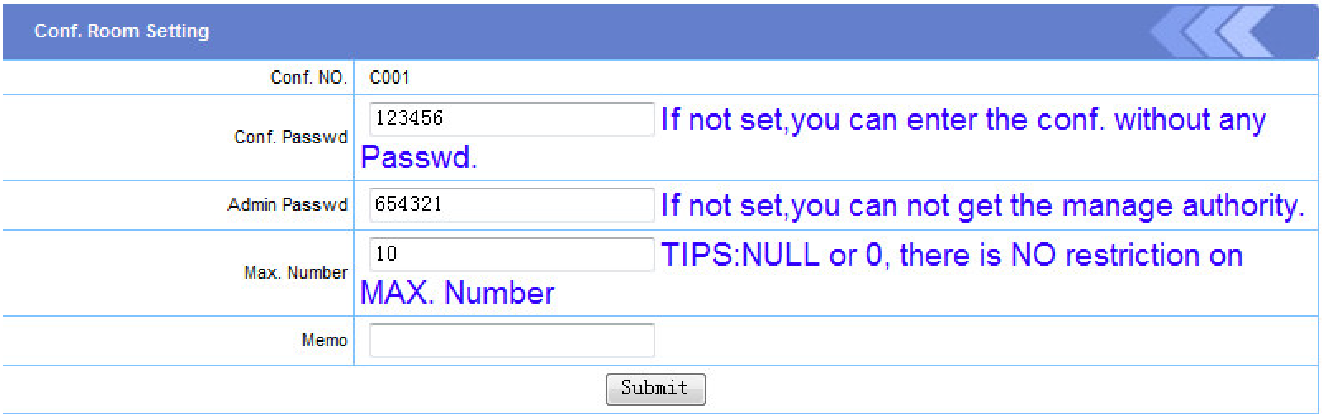
(5) Support IVR Conference Invitation

You may make conference invitation by IVR. Please refer to the IVR conference room control.

(6) Modify Voice conference room service number

You may change the conference room service number if the default number is not desired.

The conference room settings are as in the following page.



Conf. Room Setting	
Conf. NO.	C001
Conf. Passwd	123456 If not set,you can enter the conf. without any Passwd.
Admin Passwd	654321 If not set,you can not get the manage authority.
Max. Number	10 TIPS:NULL or 0, there is NO restriction on MAX. Number
Memo	
Submit	

The conference room password is used to enter the conference room. The maximum capacity is for the maximum number of users in the room.

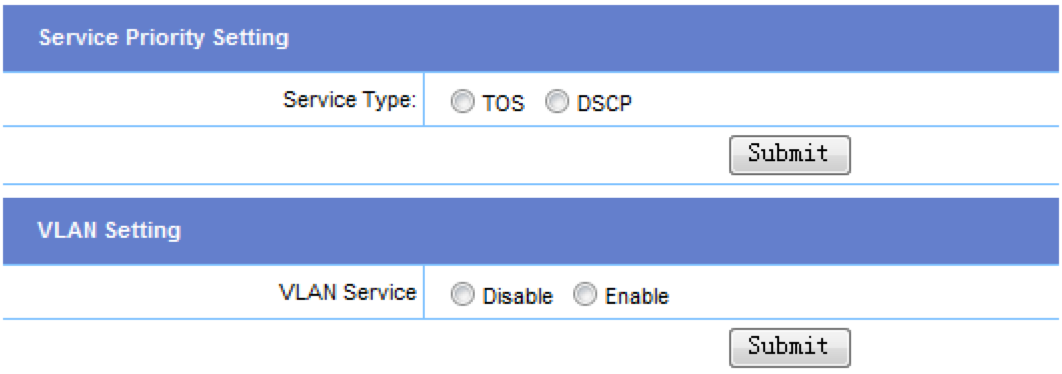
8.7.4 Upload XML File Procedure

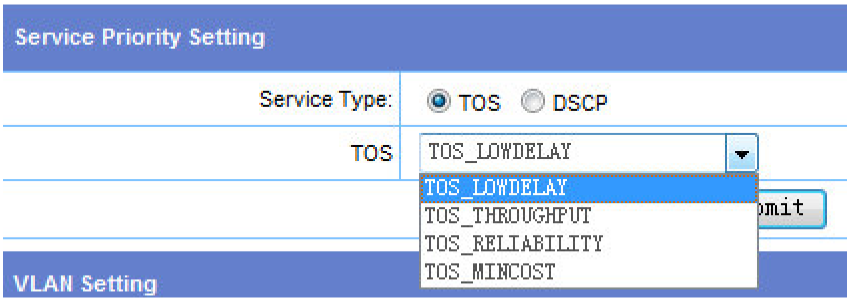
In general, the corporate IP PBX will define a set of IVR procedures, or multi-stage interactive IVR for its own use. For this, the EP520 provides a set of predefined IVR by XML, and can be added to become multi-stage interactive IVR. Examples are as in Appendix 1. In addition, the IP PBX also provides a graphical editor. The user could do the graphical connection to develop his own IVR. Please refer to the help file.

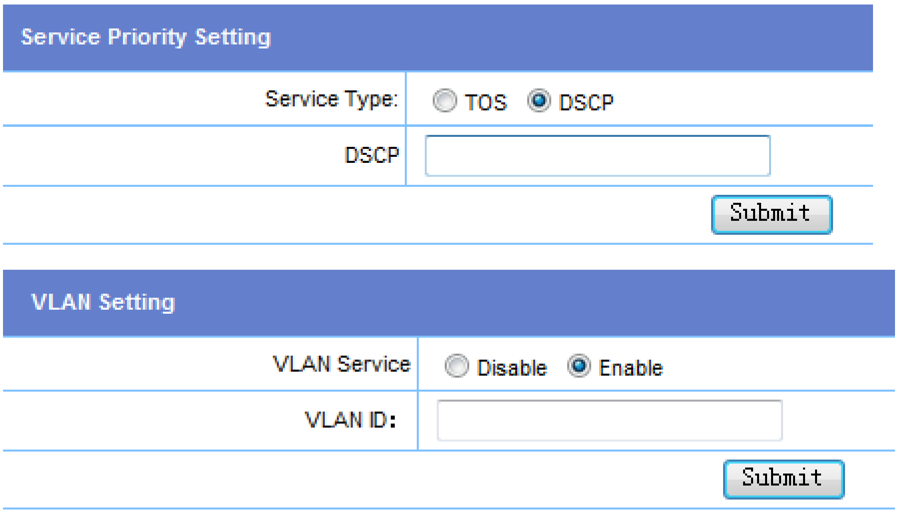
When you finished IVR design with XML file, you may upload in this section and define an input number for this IVR. For example, if you want this IVR become the IVR for auto attendant, you simply set the IVR number in the auto attendant. Make sure you have uploaded all the necessary IVR message files.

8.7.5 Network Parameter

The network parameters allow to enable/disable IP network functions.

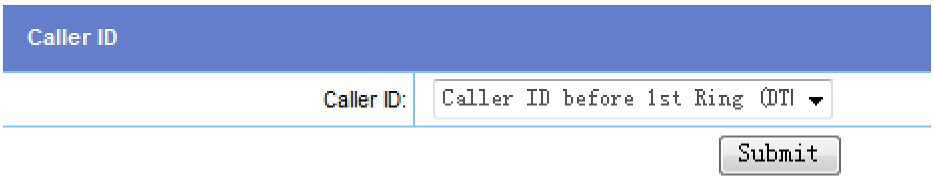


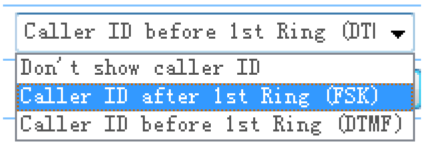




8.7.6 Caller ID

This allow to configure the caller ID fuctions and to show the incoming call numbers.





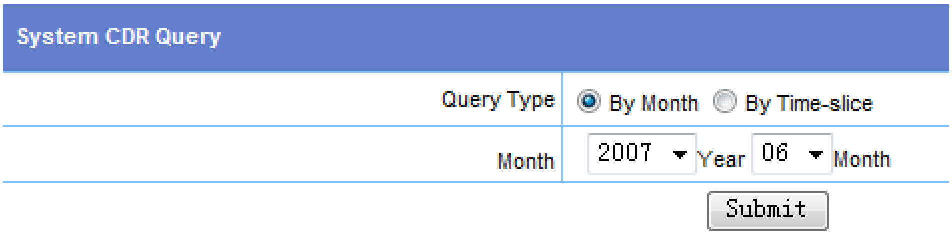
Default is “Caller ID after 1st Ring (FSK)”.

8.8 Call Detail Records Query

The IP PBX keeps call records for 2 months. You may have two ways for record queries. One is to query for the whole IP PBX, and the other is for the specific user. If you want to keep the call records, you may copy to USB disk before erased.

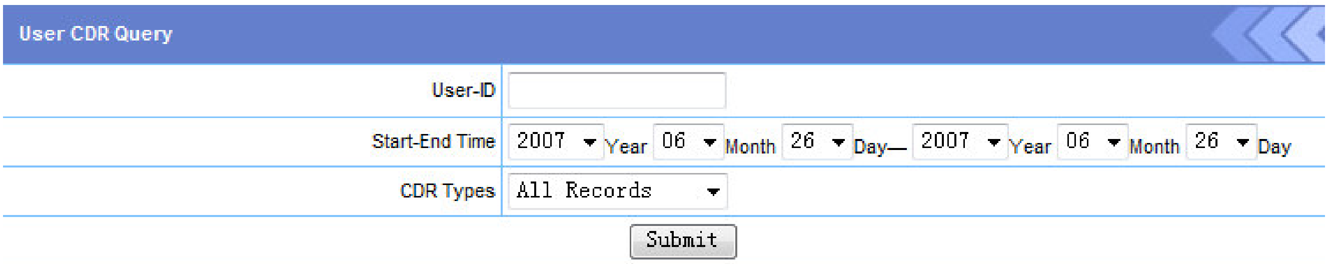
8.8.1 System Call Records query

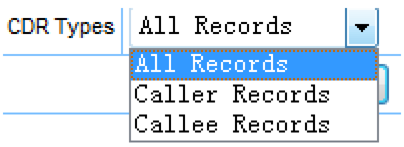
You may query all the calls during the specified time frame and export to local storages.



8.8.2 User Call Records

You may query all the calls for certain user during the specified time frame and export to local storages.



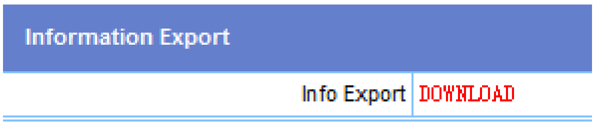


8.9 Factory Default Settings

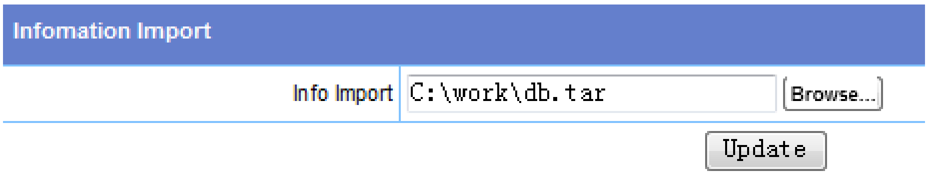
8.9.1 User information Export & Import

Before upgrading the EP520 IP-PBX or reset to factory defaults, you may export all the user information to local storage, and import back after the upgrade or default settings are done.

Export: Click on "DOWNLOAD" button and select "Save as New File".



Import: Select the desired file, and upload.



8.9.2 System Upgrade

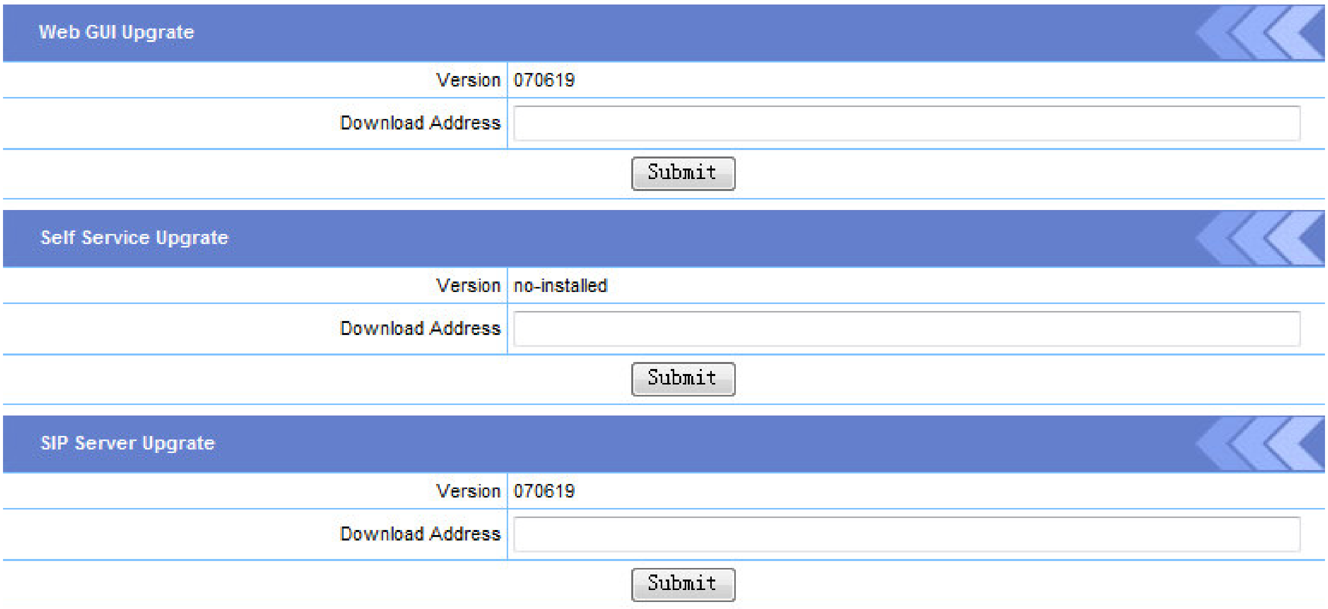
EP520 IP-PBX provides WEB upgrading. Before upgrading, make sure the following;

(1) Get the desired upgrade version. The EP520 consists of three main parts; system, managing program, and self service. You must specify which part to be upgraded.

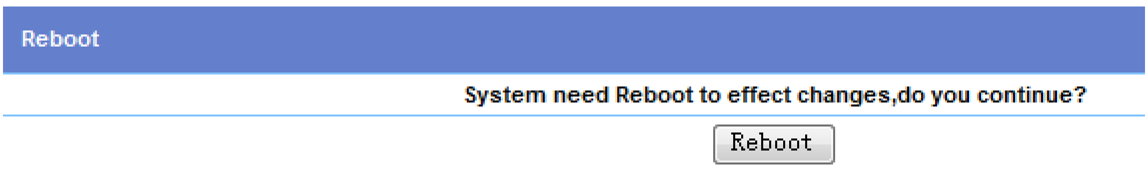
(2) Backup a copy of user information by import/export data files.

(3) Make sure the power is on while upgrading.

Then you may upgrade per the web instruction procedures.



8.9.3 Reboot

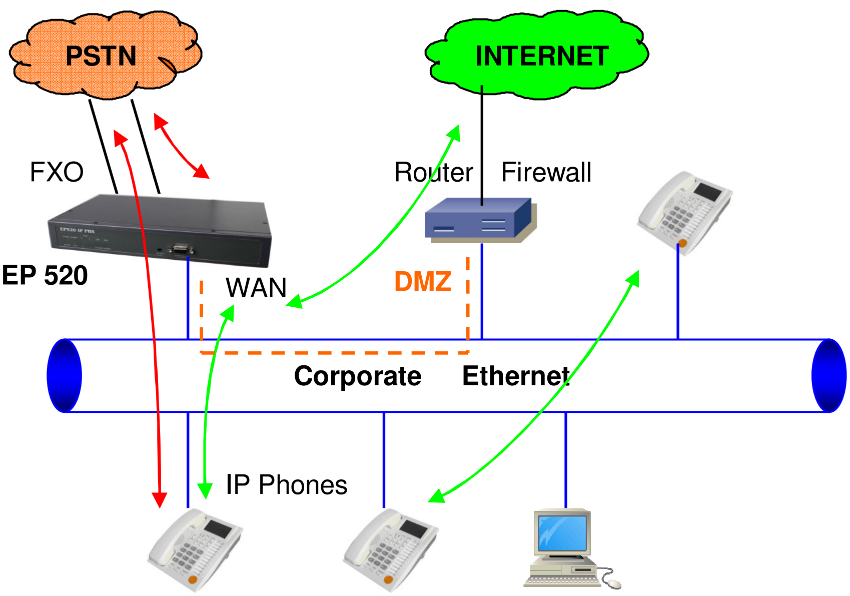


9. Applications

Applications of IP PBX under Firewall with DMZ

This will protect corporate network security while allowing EP520 to work as **IP-PBX** for VoIP applications. When EP520 **IP-PBX** is operating under the corporate firewall, remember to enable and open the following service port numbers for VoIP applications.

- TCP Port：22, 53, 80, 1723
- UDP Port：53, 5060 (and other port numbers for SIP), 1194, 10000-20000



Applications of IP PBX with ADSL

This EP520 supports PPPOE to work with ADSL and to integrate **IP-PBX** into the corporate network for VoIP applications.